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1980 Survey of the Check Collection System

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1980 Survey of the Check Collection System

The Check Collection System Performance Study

Banking's check collection system carries the bulk of interbank data. This system, while using relatively specialized check handling equipment, is still labor intensive. Although the interbank check exchange is often called the check collection system, it is, in reality, a loosely organized coordinated system. The procedures for control, crediting, security, and sorting are partially controlled by the Federal Reserve System and the Uniform Commercial Code, and partially based on agreements between banks through correspondent banking relationships.

Check collection and check processing are the result of a rather loose coupling of operations in many separate banks. Consequently, there may be a significant difference in the cost, speed, productive capacity, and quality of the various bank processing systems.

Each bank is responsible for its own check processing operation. No one banker or Federal Reserve processing officer can be held responsible for total system performance. Nevertheless, each bank may suffer if the entire check exchange system falters.

Because system performance varies over time due to changes in check volume, labor, processing equipment and systems, and transportation couriers, up-to-date information is required to enable each bank in the system to compare its experiences with other banks.

To maintain the effectiveness of the check collection system, it is essential that defects be remedied before they become serious. Accordingly, the collection and the assessment of the data concerning the "frequency of error" aspect of the system within this report provide the banking industry with effective indicators with which to gauge adverse trends in the performance of the check collection system.

Background

In 1970, Arthur D. Little, Inc. (ADL), under the auspices of the Operations and Technology Task Force of the Monetary and Payments System (MAPS) of the American Bankers Association, collected and published data relative to the performance of banking's check collection system.* The data were used as a basis for

*_The Outlook for the Nation's Check Payment System: 1970–1980_, Arthur D. Little, Inc., Cambridge, Massachusetts, December, 1970.

evaluating the adequacy of the check collection system from a comparison with similar data in future years. Therefore, ADL recommended a periodic collection of check volume data. The Atlanta Federal Reserve Bank Check Study, a project co-sponsored by ABA, BAI, and the Federal Reserve System, represents follow-up research on the nation's check processing volume, as it existed when the data were collected in June, 1979.

Meanwhile, Bank Administration Institute has continued to conduct annual performance measurement surveys of the nation's check collection system. Since 1971, an annual survey has been conducted to collect data that would provide bankers with a measure of industry system fails and a general set of measures for their own check processing operation. The results of each survey also were published by BAI.

This report, the tenth in BAI's continuing program of monitoring the performance of banking's check collection system, analyzes the system's performance for 1977 through 1980. Survey data for 1971 through 1976 may be found in previous reports.

Survey Distribution

In October, 1980, 211 commercial banks ($250 million or more in resources) received a BAI *Check Collection Performance Measurement Survey* questionnaire. All 52 banks that had participated in the original ADL/MAPS study were included. Several banks that had been unable to participate in previous years were dropped from the survey distribution in 1980. The survey questionnaire was therefore sent to banks that had not participated previously and which were of similar size in the same geographic region. The banks were asked to collect data for the week of November 17–21, 1980.

Survey Respondents

The total number of survey respondents is shown in Table 1. Of the total number of banks surveyed, 81% responded. The response rate was 69% among the banks that had participated in the ADL survey. The 1980 data represent 423 million checks processed, including 235 million transit checks and 188 million on-us checks. These data were analyzed to determine overall check collection performance related to past measurements and manpower utilization by check processing tasks.

Appendix A consists of the 1980 survey form. Appendix B presents data on check flow patterns between banks. Appendix C summarizes many of the comments on check collection and processing operations that were submitted by bankers who participated in the 1980 BAI survey.

1980 Survey Highlights

The highlights of the 1980 survey reveal the following changes from the previous year:

- *The average reject rate*. This rate was reduced from 2.1% in 1979 to 1.9% in 1980.
- *Transit return items discovered*. The average rate decreased significantly from

Table 1

Survey Respondents by Geographic Area

Area*	ADL Banks 1977	1978	1979	1980	All Banks† 1977	1978	1979	1980
Boston	3	3	1	3	14	10	9	12
New York	5	5	5	4	18	20	17	17
Philadelphia	3	3	1	2	21	18	22	24
Pittsburgh	4	3	2	3	6	6	5	5
Washington, D.C.	0	2	1	1	8	10	7	9
Atlanta	2	2	2	1	18	14	19	21
Chicago	4	6	3	5	14	12	8	11
Cleveland	2	3	3	3	10	12	11	11
Detroit	2	3	1	2	9	6	8	9
Minneapolis/St. Paul	3	0	0	0	3	0	0	0
St. Louis	3	1	2	3	10	9	9	11
Dallas	3	3	2	3	8	6	4	6
Houston	2	2	2	2	5	8	9	8
Los Angeles	2	2	1	1	9	9	9	10
San Francisco	3	2	2	1	9	8	11	11
Denver	3	3	2	2	6	6	5	5
Total banks	44	43	30	36	168	154	153	170

*_The Outlook for the Nation's Check Payment System: 1970–1980_, Arthur D. Little, Inc., Cambridge, Massachusetts, December, 1970.

†The non-ADL banks are not necessarily located in the cities surveyed by ADL. For the sake of consistency, however, their data are included in a regional area that has as its center the city studied in this survey. All reporting banks include the data from the ADL banks.

1,207.1 items per 100,000 transit items sent in 1979 to 1,004.1 items in 1980. The 16.8% decrease in 1980 reverses a sharply increasing trend begun in 1976.

- *Free and lost items discovered.* The average rate discovered decreased 9.7% from 21.7 items per 100,000 incoming items in 1979 to 19.6 items in 1980.
- *Missent, miscoded, and listing error items discovered.* The average rate discovered decreased 19.1% from 23.0 items per 100,000 transit items sent in 1979 to 18.6 items in 1980.
- *Transit holdover.* The average rate continued its steady decline to 1.9% of transit items processed in 1980, from an average rate of 2.5% in 1979. This figure was 9.4% in 1973. The average dollar amount of each item held over increased slightly for the second consecutive year to $678.00.
- *Resolution time for outstanding items.* The resolution time showed a reversal in trend. Although the survey results from 1979 showed an improvement, the 1980 results regarding percentage of outstanding dollars are the worst since 1972. Total outstanding exception item dollars rose 2% from 1979 levels, while the total number of items outstanding rose 10.7%. In 1980, 38.2% of these dollars and 77.2% of the items were reported more than one month outstanding, compared to 30% of the dollars and 70.1% of the items in 1979.
- *Overall labor productivity.* Productivity measured in checks processed per

man-hour registered mixed results compared with 1979 data. Average productivity fell to 524.6 items or 1% from 1979, the first decline in the average rate since 1974. However, the median rate improved to 522.7 items per man-hour, 6.6% from 1979.

Significant improvement in the efficiency of certain operations in the check collection system was noted for the first time in two years. Because inflation has eroded interest income profitability, bankers have renewed their resolve to invest in systems and to tighten internal controls so that greater productivity will generate compensating gains in noninterest income and/or a reduction in operating expenses.

Because the Atlanta Federal Reserve Bank Check Study projects an increasing national check volume until at least 1990, slight yearly gains in productivity will only serve to maintain the status quo. Thus, further real gains will be achieved when more senior operations managers of major check processing banks become committed to programs of quality measurement and control.

The Measures of System Performance

The primary purpose of the BAI survey is to monitor the industry's check collection system performance. The system's performance can be measured in several ways: cost, speed, or the frequency of error. Although there may be many different ideas concerning what constitutes a system failure or an error, the survey and its succeeding analysis considered the following items to be representative of defects in the system's operation:

- Reject rates.
- Transit returns.
- Free or lost items.
- Missent, miscoded, and listing errors.
- Transit holdover.

Because banks use various definitions and data collection methods, the data presented on system failures have validity only when compared with data collected in the same manner.

Only minor modifications were made in the 1980 survey questionnaire. These changes did not appear to affect the collected data and were comparable to the previous survey data. If the responding banks collected the data in the same manner, the 1980 survey results will identify the changes that have occurred in the past year. All performance analyses for each subject are presented together.

The formulas used in the calculation for each table are given to assist bankers in making their own comparisons. Several respondents could not answer every question in the survey because of the internal systems in their banks. Consequently, only those banks that furnished valid answers to all questions pertaining to a given formula were considered in the calculations. This accounts for the varying number of respondents in the different tables.

Reader/Sorter Reject Rates

Definition: Percentage of items rejected for any reason by a MICR reader/sorter.

As shown in Table 2, the calculated average reject rate was reduced from 2.1% experienced in 1979 to 1.9% in 1980.

An examination of the results for all banks revealed that 11 areas experienced a

Table 2

Percent of Rejects on Reader/Sorter Equipment by Area

	ADL Banks				All Banks			
Area	**1977**	**1978**	**1979**	**1980**	**1977**	**1978**	**1979**	**1980**
Boston	2.1%	2.0%	2.3%	2.3%	1.9%	2.1%	2.4%	2.1%
New York	2.8	2.4	2.4	2.6	2.6	2.3	2.4	2.2
Philadelphia	2.3	2.0	1.1	1.1	2.1	2.2	1.9	1.9
Pittsburgh	1.5	1.6	1.4	1.1	1.6	1.6	1.9	1.8
Washington, D.C.	*	1.6	1.0	*	1.8	2.2	1.9	2.1
Atlanta	2.8	2.8	1.9	2.8	2.4	2.3	2.1	1.9
Chicago	1.9	2.0	2.6	1.4	2.0	2.0	2.1	1.7
Cleveland	2.1	1.7	1.7	1.9	2.6	2.1	2.2	1.9
Detroit	2.6	2.0	1.6	2.2	2.6	2.0	2.5	1.8
Minneapolis/St. Paul	2.1	*	*	*	2.1	*	*	*
St. Louis	2.0	1.9	1.4	1.8	2.1	2.1	2.0	2.0
Dallas	1.8	2.8	3.0	2.2	2.0	2.8	2.4	1.8
Houston	1.6	2.4	2.2	2.0	2.3	2.5	2.2	2.1
Los Angeles	1.8	2.1	1.7	2.3	1.7	1.9	2.1	2.0
San Francisco	1.8	1.5	1.5	2.0	1.8	1.6	2.3	1.6
Denver	1.7	1.8	1.7	1.9	2.1	2.8	1.7	1.7
Total banks	44	41	30	33	166	150	152	158
Average	2.1%	2.0%	1.9%	1.9%	2.1%	2.1%	2.1%	1.9%

*No respondents.

$$\frac{Q27}{Q7} \times 100$$

reduction in the reject rate, ranging from 0.1% to 0.7%. After an increase in the reject rate between 1978 and 1979, the Detroit region reported a significant decrease in the average percent of reader/sorter rejects by 0.7% in the 1980 survey period. Only one area, Washington, D.C., experienced an increase in the reject rate.

It is significant that 10 of the 158 reporting banks had a reject rate of less than 1.0%, while 11 banks were in the range between 3.0% and 3.5%. The median rate was 1.8% (Table 3).

Of the 127 banks that were able to present a more refined breakdown of first-pass rejects by type (Table 4), on the average:

- 18.6% were due to errors in the transit number field.
- 15.7% were due to errors in the account number field.
- 41.5% were due to errors in the dollar amount field.
- 24.2% were due to other reasons, or were not readily classified in the previous categories.

The Joint Industry Task Force on Routing Numbers found that 50% of all rejects were due to errors in the transit field, amount field, or both. Thus, the nine-digit routing number was designed by the Task Force to eliminate single-digit "can't

Table 3

Distribution of the Reject Rate

Reject Rate	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
0% - 1.0%	1	0	1	3	5	0	6	10
1.0% - 1.5%	6	8	9	5	24	23	26	38
1.5% - 2.0%	15	18	9	8	44	49	47	40
2.0% - 2.5%	11	5	4	13	34	28	33	38
2.5% - 3.0%	8	4	5	4	31	25	21	21
3.0% - 3.5%	2	4	1	0	12	14	7	11
3.5% - 4.0%	0	1	0	0	5	4	7	0
4.0% - 4.5%	1	1	1	0	7	4	2	0
4.5% - 5.0%	0	0	0	0	1	0	1	0
5.0% - 5.5%	0	0	0	0	1	1	0	0
5.5% - 6.0%	0	0	0	0	0	2	1	0
Over 6.0%	0	0	0	0	2	0	1	0
Total banks	44	41	30	33	166	150	152	158
Average	2.1	2.0	1.9	1.9	2.1	2.1	2.1	1.9
Median	2.0	1.9	1.8	2.0	2.1	2.0	2.0	1.8

$$\frac{Q27}{Q7} \times 100$$

Table 4

Percent of First-Pass Rejects by Type and by Area

Area	Transit Number* 1978	1979	1980	Account Number† 1978	1979	1980	Dollar Amount‡ 1978	1979	1980	Other Reasons§ 1978	1979	1980
Boston	27%	27%	21%	14%	19%	20%	41%	44%	45%	18%	10%	14%
New York	19	19	19	18	19	15	46	40	39	17	21	27
Philadelphia	14	14	14	10	18	22	53	42	35	23	26	29
Pittsburgh	15	20	17	19	20	16	44	38	37	22	22	29
Washington, D.C.	23	29	27	14	19	15	46	40	34	17	13	24
Atlanta	21	20	16	23	21	17	42	35	40	14	24	27
Chicago	21	23	21	12	12	14	49	44	40	18	21	26
Cleveland	18	18	18	22	19	21	37	39	40	23	24	20
Detroit	19	18	18	22	22	17	26	35	45	33	25	21
Minneapolis/St. Paul	*	*	*	*	*	*	*	*	*	*	*	*
St. Louis	18	16	18	19	9	10	42	47	47	30	28	25
Dallas	49	25	16	1	25	13	43	25	35	7	25	36
Houston	19	19	27	14	16	12	48	59	45	19	7	15
Los Angeles	16	19	16	14	23	23	33	36	43	37	21	18
San Francisco	22	18	13	19	19	15	34	36	39	25	27	33
Denver	13	17	22	13	16	16	26	45	45	48	21	17
Total banks	86	106	127									
Average	19.5%	19.2%	18.6%	16.1%	18.5%	15.7%	40.7%	40.5%	41.5%	23.7%	21.9%	24.2%
Median	8.8%	18.1%	17.1%	1.5%	19.3%	17.3%	19.8%	40.2%	39.5%	2.0%	20.6%	21.5%

*No respondents;

$$\frac{*Q23}{Q27} \times 100;\ \frac{\dagger Q24}{Q27} \times 100;\ \frac{\ddagger Q25}{Q27} \times 100;\ \frac{\S Q26}{Q27} \times 100$$

reads" and to minimize rejects in this field. Since the introduction of the nine-digit routing number in 1978, significant progress has been made by check printers in complying with new instructions, but only slight improvement continues to be made in the read rate in the transit number field. In its study of the MICR line, the ABA has discussed the feasibility of using check digits in other fields to help reduce reject rates. The results of this survey seem to suggest that research needs to be conducted on the reasons why the nine-digit routing number has not dramatically achieved its purpose.

In summary, the improvement in reject rates for all banks surveyed in 11 areas must be taken as a positive sign for MICR quality control in the United States. Technology is available to effect greater reductions; however, check volumes continue to increase, with reject processing costs showing a similar trend.

A comparison on consolidated figures by major geographic sections of the country is shown below:

	Consolidated Reject Rates			
Section	1977	1978	1979	1980
6 Eastern areas	2.2%	2.2%	2.1%	2.0%
6 Midwestern areas	2.2%	2.2%	2.2%	1.9%
3 Western areas	1.8%	1.9%	2.0%	1.8%

Transit Returns

Definition: Items returned today for any reason that were originally sent out as transit items from this bank.

The average rate of transit return items discovered decreased significantly from 1,207.1 items per 100,000 transit items sent in 1979 to 1,004.1 items in 1980 (Table 5). For all banks, both the average and the median number of items returned per 100,000 transit items sent decreased (Table 6). The 16.8% decrease in 1980 reverses a sharply increasing trend begun in 1976.

In 1976, 64% of the responding banks experienced an average return rate under 1,000 items per 100,000 transit items sent. By 1980, only 58% of the responding banks reported a rate under 1,000 items (Table 6). Although the trend is improving, return items continue to pose a significant problem to the check processing industry because automated systems have not yet been perfected to deal with a labor intensive operation.

Table 7 shows the distribution of banks according to their return item rate and the average dollar value of each item returned. The average value for each return item increased from $800 in 1979 to $813 in 1980, while the median value increased to $496 in the 1980 survey.

Table 5

Transit Returns by Area
(Rate per 100,000 of Transit Items Sent)

Area	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
Boston	534.2	601.6	832.6	712.7	529.3	593.4	911.3	787.2
New York	692.3	915.9	1,601.9	901.0	684.0	840.3	1,310.4	904.3
Philadelphia	744.0	797.9	942.9	1,046.2	672.3	772.4	813.6	800.4
Pittsburgh	724.6	904.9	845.5	846.0	707.9	824.6	598.9	831.8
Washington, D.C.	*	1,735.6	974.2	1,228.6	750.4	1,041.4	1,070.3	1,138.4
Atlanta	1,318.9	832.8	1,066.1	726.0	1,217.8	914.6	1,298.9	1,046.6
Chicago	669.0	815.2	1,032.7	960.9	704.1	805.1	1,005.0	929.4
Cleveland	1,195.9	1,350.7	1,352.1	1,511.3	916.0	1,023.8	1,039.5	1,106.5
Detroit	927.5	945.1	1,453.6	1,417.3	763.3	883.1	1,320.6	966.9
Minneapolis/St. Paul	689.0	*	*	*	689.0	*	*	*
St. Louis	1,087.9	1,263.4	1,276.0	1,260.9	1,072.9	1,362.2	1,428.5	1,309.0
Dallas	906.5	994.0	1,311.7	1,000.2	931.2	952.7	1,530.1	867.7
Houston	1,325.1	949.8	1,173.4	1,311.6	1,412.3	1,152.0	1,308.2	1,474.5
Los Angeles	1,212.2	1,079.8	1,124.4	2,092.9	1,005.2	958.1	1,085.4	1,134.9
San Francisco	1,741.0	1,822.0	2,046.8	1,547.7	1,453.4	1,548.8	1,712.4	1,088.6
Denver	1,312.2	1,581.7	1,923.2	899.2	1,274.4	1,443.1	2,166.1	1,085.4
Total banks	44	43	30	36	165	147	146	165
Average	1,026.9	1,118.0	1,325.9	1,046.0	942.6	1,023.1	1,207.1	1,004.1

*No respondents.

$$\frac{Q17}{Q10} \times 100{,}000$$

Table 6

The Distribution of the Transit Return Rate

Transit Return Rate	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
0 — 200	0	0	0	0	0	1	2	1
200 — 400	1	1	0	1	8	9	2	6
400 — 600	7	3	0	0	36	19	11	7
600 — 800	10	10	3	11	47	43	25	44
800 — 1,000	9	10	9	5	23	29	34	37
1,000 — 1,200	6	5	3	8	15	12	14	28
1,200 — 1,400	4	6	8	2	9	9	21	19
1,400 — 1,600	4	0	2	5	9	5	9	8
1,600 — 1,800	1	3	0	2	6	10	4	7
1,800 — 2,000	0	1	1	0	4	3	7	4
2,000 — 2,200	1	0	0	1	3	1	5	2
2,200 — 2,400	0	2	2	1	1	2	4	1
Over 2,400	1	2	2	0	4	4	8	1
Total banks	44	43	30	36	165	147	146	165
Average	1,026.9	1,118.0	1,325.9	1,046.0	942.6	1,023.1	1,207.1	1,004.1
Median	874.7	957.6	1,190.3	1,021.9	747.2	791.1	972.0	931.1

$$\frac{Q17}{Q10} \times 100{,}000$$

Table 7

Transit Return Dollar Value by Rate of Transit Returns

ADL Banks

Transit Returns per 100,000 Items Sent*	Number of Banks 1977	Number of Banks 1978	Number of Banks 1979	Number of Banks 1980	Average Dollar Value† 1977	Average Dollar Value† 1978	Average Dollar Value† 1979	Average Dollar Value† 1980
0 — 500	4	2	0	1	$ 417	$1,240	$ 0	$ 255
500 — 1,000	23	22	12	16	3,772	0	619	1,259
1,000 — 1,500	11	11	12	12	873	967	1,071	610
1,500 — 2,000	4	4	2	5	362	275	493	1,353
Over 2,000	2	4	4	2	501	812	2,166	520
Total banks	44	43	30	36				
Average					$1,789	$ 771	$ 948	$1,043
Median					$ 374	$ 600	$ 620	$ 758

All Banks

Transit Returns per 100,000 Items Sent*	Number of Banks 1977	Number of Banks 1978	Number of Banks 1979	Number of Banks 1980	Average Dollar Value† 1977	Average Dollar Value† 1978	Average Dollar Value† 1979	Average Dollar Value† 1980
0 — 500	25	16	8	8	$ 428	$ 830	$ 679	$ 714
500 — 1,000	89	85	66	87	2,124	731	555	705
1,000 — 1,500	30	22	40	50	645	885	1,102	583
1,500 — 2,000	13	17	15	16	359	310	365	1,023
Over 2,000	8	7	17	4	440	702	858	513
Total banks	165	147	146	165				
Average					$1,186	$ 659	$ 800	$ 813
Median					$ 374	$ 417	$ 409	$ 496

* $\frac{Q17}{Q10} \times 100{,}000$

† $\frac{Q18}{Q17}$

Free and Lost Items

Definitions: *Free items are items received but not listed on the incoming cash letter.*
Lost items are items listed on the incoming cash letter but not received.

The combined average rate of free and lost items discovered decreased 9.7% from 21.7 items per 100,000 incoming items in 1979 to 19.6 items in 1980, while the median rate decreased 3.6% to 13.4 items per 100,000 incoming items in 1980 (Table 8). Tables 9 and 10 show, respectively, the rate of free items discovered and the rate of lost items discovered. As in previous surveys, the lost item rate (11.9) was greater than the free item rate (7.7). In Tables 9 and 10, the consistent contribution of the Dallas area banks in reducing both rates is evident.

The distribution of free and lost items is shown in Table 11. The number of all banks reporting the lowest rate (0–5 items) increased by 38% from 1979.

Table 8

Free and Lost Items Discovered by Area
(Rate per 100,000 Incoming Items)

	ADL Banks				All Banks			
Area	**1977**	**1978**	**1979**	**1980**	**1977**	**1978**	**1979**	**1980**
Boston	5.3	21.7	14.8	11.2	27.6	13.4	11.9	10.2
New York	29.9	28.1	25.6	19.5	28.1	24.8	28.7	14.6
Philadelphia	12.2	12.9	12.7	7.3	17.0	13.7	8.2	13.3
Pittsburgh	11.7	8.1	15.0	10.1	13.2	8.3	9.3	15.7
Washington, D.C.	*	19.4	24.3	21.1	22.1	22.6	18.5	26.5
Atlanta	35.7	35.0	30.3	93.3	22.5	21.3	20.6	26.2
Chicago	19.6	13.2	16.1	14.0	19.0	13.4	12.2	14.7
Cleveland	21.4	30.5	25.2	39.5	16.7	23.2	25.3	23.1
Detroit	53.1	37.7	40.6	58.2	48.4	39.2	17.3	31.9
Minneapolis/St. Paul	17.7	*	*	*	17.7	*	*	*
St. Louis	20.4	17.8	53.0	33.0	21.1	26.2	25.9	31.9
Dallas	51.8	40.7	37.6	18.8	44.4	43.5	52.6	16.9
Houston	28.5	20.0	14.3	12.8	29.8	24.6	21.0	24.3
Los Angeles	21.2	13.3	4.9	20.8	18.8	11.6	48.4	18.7
San Francisco	64.5	19.4	42.1	29.9	54.8	23.7	26.3	19.6
Denver	9.2	14.0	24.4	4.6	12.2	16.8	18.1	10.6
Total banks	42	43	29	36	162	152	148	165
Average	32.2	21.7	25.2	21.4	28.2	21.3	21.7	19.6
Median	18.2	15.1	19.5	17.8	16.1	12.5	13.9	13.4

*No respondents.

$$\frac{Q35 + Q37}{Q1 + Q2} \times 100{,}000$$

Table 9

Free Items Discovered by Area (Rate per 100,000 Incoming Items)

Area	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
Boston	2.3	12.3	5.5	4.3	12.6	6.8	3.3	4.1
New York	11.0	11.1	11.1	8.6	10.3	10.1	6.4	7.2
Philadelphia	4.0	6.0	3.7	3.0	8.1	6.0	3.5	4.8
Pittsburgh	5.3	3.9	3.8	4.1	4.9	3.3	3.4	3.4
Washington, D.C.	*	6.8	9.3	7.8	11.4	9.6	7.5	8.2
Atlanta	14.2	13.3	10.7	37.3	8.6	7.8	7.8	10.9
Chicago	7.6	4.1	4.3	4.7	8.2	4.5	4.0	6.3
Cleveland	7.3	13.7	9.7	16.1	7.2	9.2	7.1	8.1
Detroit	27.8	13.0	21.1	7.9	23.8	13.9	16.3	6.1
Minneapolis/St. Paul	6.0	*	*	*	6.0	*	*	*
St. Louis	6.1	7.8	36.5	18.3	8.2	10.4	12.4	15.4
Dallas	31.1	18.9	14.7	7.9	24.6	23.0	23.5	6.6
Houston	13.2	10.6	5.2	6.9	15.6	12.3	6.4	8.8
Los Angeles	6.7	3.8	1.2	6.9	5.2	3.0	40.4	4.7
San Francisco	23.0	6.8	15.8	6.9	19.5	8.9	7.5	5.2
Denver	2.4	4.9	13.7	1.6	4.7	5.9	10.1	4.8
Total banks	42	43	29	36	162	152	148	165
Average	13.0	8.7	10.4	8.1	11.7	8.7	8.9	7.7
Median	6.3	5.2	6.6	6.0	5.3	4.5	4.1	4.6

*No respondents.

$$\frac{Q35}{Q1 + Q2} \times 100{,}000$$

Table 10

Lost Items Discovered by Area (Rate per 100,000 Incoming Items)

Area	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
Boston	3.0	9.4	9.3	6.9	15.0	6.6	8.5	6.0
New York	19.0	17.0	14.5	11.0	17.8	14.7	22.4	7.4
Philadelphia	8.2	6.9	9.0	4.3	9.0	7.7	4.7	8.5
Pittsburgh	6.4	4.2	11.2	6.0	8.3	5.0	5.9	12.3
Washington, D.C.	*	12.7	15.1	13.4	10.8	13.0	11.0	18.3
Atlanta	21.5	21.6	19.7	56.0	13.9	13.5	12.8	15.3
Chicago	12.0	9.0	11.9	9.3	10.8	8.9	8.2	8.4
Cleveland	14.1	16.8	15.5	23.4	9.5	14.0	18.2	15.0
Detroit	25.4	24.7	19.6	50.4	24.5	25.3	11.9	25.7
Minneapolis/St. Paul	11.7	*	*	*	11.7	*	*	*
St. Louis	14.3	10.0	16.4	14.8	12.9	15.7	13.5	16.5
Dallas	20.7	21.7	22.9	10.9	19.8	20.5	29.1	10.3
Houston	15.3	9.4	9.2	5.9	14.2	12.3	14.6	15.5
Los Angeles	14.6	9.5	3.7	13.9	13.6	8.6	8.0	14.0
San Francisco	41.5	12.7	26.2	23.0	35.3	14.8	18.8	14.3
Denver	6.9	9.2	10.7	3.0	7.5	10.9	7.9	5.7
Total banks	42	43	29	36	162	152	148	165
Average	19.2	12.9	14.7	13.3	16.5	12.6	12.9	11.9
Median	11.8	9.5	12.5	10.1	9.2	7.9	8.6	8.1

*No respondents.

$$\frac{Q37}{Q1 + Q2} \times 100{,}000$$

Table 11

The Distribution of the Free and Lost Items Rate

Rate	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
0 — 5	3	3	1	5	19	18	21	29
5 — 10	3	11	5	7	27	41	37	40
10 — 15	10	9	6	4	28	27	23	20
15 — 20	5	6	2	5	19	17	14	13
20 — 25	2	2	4	4	12	7	13	14
25 — 30	6	5	1	2	12	10	7	8
30 — 35	3	2	0	1	8	7	6	13
35 — 40	0	1	1	2	8	2	7	8
40 — 45	2	0	3	3	4	4	6	6
45 — 50	1	1	1	0	3	1	4	3
50 — 100	5	5	4	3	19	13	8	11
Over 100	2	0	0	0	3	5	2	0
Total banks	42	43	29	36	162	152	148	165
Average	32.2	21.7	25.2	21.4	28.2	21.3	21.7	19.6
Median	18.2	15.1	19.5	17.8	16.1	12.5	13.9	13.4

$$\frac{Q35 + Q37}{Q1 + Q2} \times 100{,}000$$

Missent, Miscoded, and Listing Error Items

Definition: Items that are discovered to have been missent for any reason, or that have been miscoded by this bank or other banks, or an error when an item was listed for one amount but drawn for a different amount.

In 1980, the average rate of missent, miscoded, and listing error items discovered out of each 100,000 transit items sent decreased 19.1% from 23.0 items in 1979 to 18.6 items in 1980, although the median rate increased 11.2% to 14.9 items (Table 12).

The average rate of missent items returned to earlier levels by decreasing to 7.9 items (Table 13), while the average rate of miscoded items increased slightly to 6.4 items in 1980 (Table 14). The average number of listing errors discovered also increased slightly to 4.3 items per 100,000 transit items sent in 1980 (Table 15). Thus, the results indicate that those banks that reported transit sending errors in 1979 have solved those problems, but increases in encoding and listing error rates demonstrate the need for continued management attention. The distribution of items discovered by banks is shown in Table 16.

Table 12

Missent, Miscoded, and Listing Error Items Discovered by Area (Rate per 100,000 Transit Items Sent)

Area	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
Boston	5.1	8.3	4.0	38.5	11.6	9.1	9.5	24.0
New York	33.1	57.6	40.6	25.4	29.1	40.4	47.2	23.4
Philadelphia	13.1	17.2	9.6	12.8	12.2	18.7	18.4	29.6
Pittsburgh	7.0	5.1	5.1	14.7	6.7	6.1	9.5	15.4
Washington, D.C.	*	4.1	7.7	2.8	16.6	12.1	17.7	16.1
Atlanta	41.6	45.7	46.6	50.8	18.6	21.2	26.1	20.9
Chicago	16.5	17.1	17.5	14.7	17.9	15.9	12.9	10.0
Cleveland	4.3	20.0	17.3	27.4	18.5	22.4	15.7	17.8
Detroit	15.0	23.1	4.6	13.5	24.9	21.8	17.4	20.0
Minneapolis/St. Paul	14.9	*	*	*	14.9	*	*	*
St. Louis	14.1	15.2	34.7	20.4	11.3	10.0	12.4	14.1
Dallas	9.2	12.3	26.4	21.6	10.0	13.0	53.7	24.1
Houston	10.9	18.4	20.6	10.0	12.5	17.9	20.3	32.8
Los Angeles	16.9	27.0	29.6	26.5	14.3	33.5	25.2	31.0
San Francisco	18.2	17.7	15.2	26.4	21.5	21.5	30.1	22.6
Denver	10.1	9.6	8.4	12.1	15.4	8.0	14.4	12.9
Total banks	42	42	29	36	163	150	149	168
Average	17.5	22.8	22.8	20.1	17.4	20.5	23.0	18.6
Median	12.8	14.1	17.2	17.2	11.5	13.6	13.4	14.9

*No respondents.

$$\frac{Q29 + Q31 + Q33}{Q10} \times 100{,}000$$

Table 13

Missent Items Discovered by Area (Rate per 100,000 Transit Items Sent)

Area	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
Boston	1.2	0.3	0.5	32.4	5.5	1.8	2.4	15.2
New York	18.2	21.2	20.8	14.7	16.1	14.9	34.0	14.6
Philadelphia	5.8	11.1	*	6.1	4.5	8.5	10.3	19.4
Pittsburgh	1.2	0.5	0.5	4.0	1.1	0.6	2.2	2.4
Washington, D.C.	*	1.4	3.0	0.5	11.0	4.8	9.5	5.1
Atlanta	0.5	6.6	21.8	12.8	4.4	5.3	9.1	5.1
Chicago	5.5	5.2	6.0	4.4	7.4	5.0	5.3	2.8
Cleveland	0.1	8.7	0.1	2.2	3.9	12.4	6.8	4.4
Detroit	7.8	14.9	*	3.2	15.7	13.9	12.6	10.4
Minneapolis/St. Paul	7.1	*	*	*	7.1	*	*	*
St. Louis	2.6	1.5	8.4	5.2	3.2	1.9	2.8	3.1
Dallas	4.4	0.7	5.3	9.1	4.5	3.6	40.3	16.1
Houston	1.3	6.6	8.9	1.7	3.8	8.3	15.1	25.5
Los Angeles	8.1	21.0	20.8	10.8	7.5	27.8	20.8	20.1
San Francisco	10.2	7.6	3.5	9.8	13.0	9.8	20.9	12.2
Denver	2.0	2.8	1.4	0.6	8.3	3.5	6.6	4.8
Total banks	42	42	29	36	163	150	149	168
Average	7.6	9.0	8.2	7.9	8.3	8.8	13.5	7.9
Median	1.5	1.5	2.3	3.8	3.3	3.1	3.6	4.2

*No respondents.

$$\frac{Q29}{Q10} \times 100{,}000$$

Table 14

Miscoded Items Discovered by Area (Rate per 100,000 Transit Items Sent)

Area	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
Boston	3.1	5.3	1.3	5.1	4.6	4.7	6.0	6.1
New York	12.9	33.2	12.0	8.4	10.8	22.5	9.3	4.7
Philadelphia	5.1	3.8	2.7	4.9	4.8	6.3	5.2	5.8
Pittsburgh	5.0	3.9	4.1	6.9	4.6	4.8	5.8	7.7
Washington, D.C.	*	1.6	4.2	1.7	2.7	4.3	5.4	6.6
Atlanta	34.6	28.6	16.2	31.7	10.8	10.0	8.4	8.6
Chicago	7.4	8.4	8.3	6.4	6.1	7.7	4.4	4.6
Cleveland	3.1	3.4	9.0	10.7	11.5	4.7	4.8	6.6
Detroit	4.2	4.3	0.3	3.6	4.2	4.2	2.6	3.5
Minneapolis/St. Paul	3.0	*	*	*	3.0	*	*	*
St. Louis	4.0	0.3	11.7	5.1	3.2	3.4	5.9	4.0
Dallas	4.5	4.7	5.4	4.8	4.3	4.1	4.0	3.4
Houston	5.7	9.7	2.5	1.5	5.1	7.5	1.9	3.6
Los Angeles	7.5	4.7	6.9	11.7	5.7	4.1	3.0	7.4
San Francisco	5.4	4.8	7.1	10.6	5.6	5.6	11.8	6.7
Denver	2.5	4.1	3.8	5.9	3.1	3.4	3.2	4.2
Total banks	42	43	29	36	163	151	150	169
Average	7.2	9.7	7.5	7.5	6.2	7.7	6.0	6.4
Median	4.9	4.7	5.5	5.8	3.8	3.8	4.1	4.7

*No respondents.

$$\frac{Q31}{Q10} \times 100{,}000$$

Table 15

Listing Error Items Discovered by Area (Rate per 100,000 Transit Items Sent)

Area	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
Boston	0.8	2.7	2.2	1.0	1.5	2.6	1.1	2.7
New York	2.0	3.2	7.8	2.3	2.2	2.9	3.9	4.0
Philadelphia	2.2	2.3	7.0	1.9	3.0	3.8	2.9	4.4
Pittsburgh	0.8	0.8	0.5	3.8	0.9	0.8	1.5	5.2
Washington, D.C.	*	1.0	0.4	0.7	2.4	2.9	2.7	4.4
Atlanta	6.5	10.4	8.6	6.3	3.5	5.8	8.6	6.8
Chicago	3.6	3.4	3.2	3.9	4.4	3.3	3.2	2.6
Cleveland	1.0	7.9	8.2	14.5	3.2	5.3	4.2	6.8
Detroit	3.0	3.8	4.3	6.7	4.9	3.6	2.2	6.1
Minneapolis/St. Paul	4.9	*	*	*	4.9	*	*	*
St. Louis	7.4	13.4	14.7	10.2	4.8	4.7	3.8	7.0
Dallas	0.3	5.7	15.6	7.8	1.2	4.6	9.4	4.7
Houston	3.9	2.1	9.2	6.7	3.6	2.1	3.3	3.7
Los Angeles	1.3	1.2	2.0	4.0	1.1	1.6	1.3	3.6
San Francisco	2.7	5.3	4.6	5.9	2.9	6.1	3.1	3.7
Denver	5.6	2.8	3.2	5.6	3.9	2.1	4.5	4.0
Total banks	42	43	29	36	163	151	150	169
Average	2.7	4.0	6.4	4.7	3.0	3.9	3.9	4.3
Median	1.7	2.5	2.8	4.5	2.1	2.2	2.0	2.4

*No respondents.

$$\frac{Q33}{Q10} \times 100{,}000$$

Table 16

The Distribution of the Missent, Miscoded, and Listing Error Items Rate

Rate	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
0 — 5	6	8	3	2	25	22	26	20
5 — 10	11	8	7	6	42	32	35	38
10 — 15	11	5	2	7	35	31	21	26
15 — 20	3	7	5	6	10	23	17	23
20 — 25	5	4	3	4	17	12	15	17
25 — 30	1	2	3	6	7	4	8	15
30 — 35	0	1	1	1	6	3	3	6
35 — 40	2	1	2	1	6	3	5	4
40 — 45	0	0	1	0	0	2	2	4
45 — 50	0	1	0	0	2	1	2	0
50 — 100	3	3	1	3	12	14	11	13
100 — 200	0	1	1	0	1	1	3	1
Over 200	0	1	0	0	0	2	1	1
Total banks	42	42	29	36	163	150	149	168
Average	17.5	22.8	22.2	20.1	17.4	20.5	23.0	18.6
Median	12.8	14.6	17.2	17.2	11.5	13.6	13.4	14.9

$$\frac{Q29 + Q31 + Q33}{Q10} \times 100{,}000$$

Exception Items Plus Return Items

Definition: Transit items that require special reconcilement with other banks, such as missent, miscoded, listing errors, returns, and free and lost items.

The average rate of exception items and transit return items discovered in 1980 was 1,062.2 items per 100,000 transit items sent. This represents a decrease of 16.1% over 1979 when the rate was 1,266.2 (Table 17). Of the 167 responding banks, 51% reported rates under 1,000 items discovered, 44% reported rates ranging from 1,000 to 2,000 items, and 5% reported rates over 2,000 items discovered (Table 18). Table 18 also shows that the median rate decreased 7.2% from 1,044.5 items in 1979 to 969.0 items in 1980.

Table 19 shows the percent of exceptions, returns, and reject items to the total volume of items processed. All of these items require special handling. For all banks in 1980, the average rate was 2.4%, a 17.2% decrease from the 1979 average rate of 2.9%, while the median rate decreased 3.7%.

Table 20 shows the number of banks distributed according to their rate of exceptions, returns, and rejects. In 1979, only 15.3% of all reporting banks had an overall rate less than 2%; however, this figure improved to 25.2% in 1980.

Table 17

Exception and Return Items Discovered by Area (Rate per 100,000 Transit Items Sent)

Area	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
Boston	541.2	631.9	850.8	761.6	566.1	616.8	934.3	884.5
New York	759.1	1,005.2	1,681.5	950.4	743.3	907.3	1,383.5	902.4
Philadelphia	768.5	826.6	966.3	1,066.5	700.7	803.9	856.0	843.6
Pittsburgh	745.4	920.7	866.2	871.9	730.3	841.7	619.7	863.1
Washington, D.C.	*	1,755.5	997.8	1,241.0	787.4	1,075.4	1,104.5	1,172.5
Atlanta	1,396.6	912.3	1,141.8	816.4	1,260.3	956.8	1,351.1	1,240.4
Chicago	705.3	848.3	1,071.9	997.6	741.4	836.8	1,032.1	957.0
Cleveland	1,224.5	1,403.9	1,397.0	1,591.2	951.1	1,069.1	1,082.5	1,151.6
Detroit	996.8	1,010.6	1,505.7	1,494.1	835.6	945.0	1,371.5	895.5
Minneapolis/St. Paul	721.5	*	*	*	721.5	*	*	*
St. Louis	1,119.1	1,293.5	1,331.2	1,312.8	1,104.5	1,389.5	1,465.7	1,353.0
Dallas	966.7	1,044.2	1,376.8	1,041.9	984.8	1,006.1	1,650.6	910.3
Houston	1,368.4	989.3	1,212.7	1,345.8	1,451.8	1,193.7	1,346.5	1,533.7
Los Angeles	1,250.0	1,119.2	1,157.3	2,144.6	1,039.3	1,004.5	1,160.8	1,194.3
San Francisco	1,821.8	1,858.5	2,110.9	1,612.5	1,539.8	1,593.5	1,932.9	1,276.3
Denver	1,334.4	1,608.7	1,960.1	918.7	1,303.4	1,471.6	2,200.4	1,111.8
Total banks	43	43	30	36	163	147	144	167
Average	1,090.2	1,632.2	1,376.3	1,089.3	994.9	1,065.1	1,266.2	1,062.2

*No respondents.

$$\frac{Q17 + Q39}{Q10} \times 100{,}000$$

Table 18

The Distribution of the Exception and Return Items Rate

Rate	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
0 — 250	0	1	0	1	0	3	2	4
250 — 500	2	1	0	0	18	12	5	4
500 — 750	12	7	0	3	49	30	17	23
750 — 1,000	11	11	12	11	41	49	45	55
1,000 — 1,250	8	8	3	11	20	18	18	44
1,250 — 1,500	4	7	8	1	13	11	21	12
1,500 — 1,750	3	3	2	6	9	11	9	11
1,750 — 2,000	1	1	1	1	4	5	10	6
2,000 — 2,500	1	2	2	2	5	5	9	5
Over 2,500	1	2	2	0	4	3	8	3
Total banks	43	43	30	36	163	147	144	167
Average	1,090.2	1,163.2	1,376.3	1,089.3	994.9	1,065.1	1,266.2	1,062.2
Median	910.0	1,009.9	1,248.6	1,059.7	804.6	887.2	1,044.5	969.0

$$\frac{Q17 + Q39}{Q10} \times 100{,}000$$

Table 19
The Percent of Exceptions, Returns, and Rejects to the Number of Items Processed

Area	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
Boston	2.5%	2.4%	2.9%	2.6%	2.1%	2.5%	2.5%	2.6%
New York	3.4	2.8	4.6	3.0	3.1	2.7	3.4	2.6
Philadelphia	2.8	2.5	1.5	1.8	2.6	2.6	2.3	2.3
Pittsburgh	1.9	2.1	1.8	1.5	2.0	2.0	1.9	1.8
Washington, D.C.	*	2.6	1.6	*	2.4	2.7	2.6	2.6
Atlanta	3.7	3.4	2.6	2.1	3.2	2.8	3.0	2.6
Chicago	2.3	2.6	3.4	2.4	2.5	2.6	2.8	2.5
Cleveland	2.8	2.4	2.4	2.9	3.1	2.6	2.9	2.7
Detroit	2.9	2.5	2.1	2.8	3.2	2.4	3.2	2.7
Minneapolis/St. Paul	2.3	*	*	*	2.3	*	*	*
St. Louis	2.7	2.8	2.6	2.7	2.8	3.1	3.0	2.8
Dallas	2.6	3.7	4.1	3.1	2.8	3.6	3.3	2.4
Houston	2.9	3.3	3.5	3.7	3.8	3.5	3.0	3.8
Los Angeles	2.4	2.7	2.2	2.0	2.2	2.4	2.8	2.1
San Francisco	2.5	2.3	2.4	2.6	2.4	2.2	3.6	2.2
Denver	2.4	2.6	3.3	2.9	2.8	3.4	3.2	2.4
Total banks	43	41	30	33	161	142	144	155
Average	2.7%	2.6%	3.1%	2.5%	2.7%	2.6%	2.9%	2.4%
Median	2.5%	2.6%	2.7%	2.6%	2.5%	2.6%	2.7%	2.6%

$$\frac{Q27 + Q17 + Q39}{Q15} \times 100$$

*No respondents.

Table 20
The Distribution of Exceptions, Returns, and Reject Rate

Rate	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
0%-1.5%	2	0	0	2	9	6	6	15
1.5%-2.0%	3	8	4	5	20	22	16	24
2.0%-2.5%	15	8	9	6	45	36	37	37
2.5%-3.0%	8	14	6	12	32	33	34	42
3.0%-3.5%	12	4	4	5	24	18	20	21
3.5%-4.0%	0	5	2	1	8	11	12	8
4.0%-4.5%	2	1	1	2	12	9	8	4
4.5%-5.0%	1	0	2	0	4	3	5	1
5.0%-5.5%	0	1	1	0	1	1	1	3
5.5%-6.0%	0	0	0	0	1	1	1	0
6.0%-6.5%	0	0	0	0	1	1	1	0
6.5%-7.0%	0	0	0	0	1	1	1	0
7.0%-7.5%	0	0	0	0	1	0	1	0
Over 7.5%	0	0	1	0	2	0	1	0
Total banks	43	41	30	33	161	142	144	155
Average	2.7	2.6	3.1	2.5	2.7	2.6	2.9	2.4
Median	2.5	2.6	2.7	2.6	2.5	2.6	2.7	2.6

$$\frac{Q27 + Q17 + Q39}{Q15} \times 100$$

A Dollar Analysis of Return and Exception Items

During the survey week, 165 banks collected data on the dollar value of the return and exception items processed. The data are shown by geographic area in Table 21. The dollar value of return items processed declined to $1.86 billion, compared with $2.01 billion in 1979, and $1.50 billion in 1978.

The total exception dollars discovered by the 165 reporting banks amounted to $1.98 billion during the 1980 survey week, while $1.88 billion was resolved. On the average, each bank was able to resolve approximately $11.4 million of its nearly $12.0 million in return and exception items. It is significant that the value of the average return item increased 11.8% to $813, while the average exception item discovered increased in value 30.1% to $19,262.

Outstanding Exception Items

Table 22 compares the outstanding exception dollars and number of items on an aged basis for 143 reporting banks. The resolution time for outstanding exception items showed a reversal in trend. While survey results from 1979 showed improvement, the 1980 results regarding percentage of outstanding dollars are the worst since 1972. Total outstanding exception item dollars rose 2% from 1979 levels, while the total number of items outstanding rose 10.7%. In 1980, 38.2% of these dollars and 77.2% of the items were reported more than one month outstanding, compared to 30% of the dollars and 70.1% of the items in 1979.

With the initiation of the Federal Reserve System's pricing for check collection services promoting different and more innovative interbank relationships, bankers are working to streamline the internal reconcilement function, while investigating more efficient methods of transaction control with other commercial banks and Federal Reserve Banks.

Table 23 compares the aged distribution of outstanding exception items for the average bank according to the method used to microfilm items: after reader/sorter processing, before reader/sorter processing, or during reader/sorter processing. Because of the various resource sizes of the reporting banks, the amount and the number of items outstanding should not be compared. The key comparison is the relative percentage.

The data indicate that banks that microfilm before reader/sorter processing resolve their items and dollars more rapidly than banks that use other methods. Since most of the large correspondent banks microfilm during reader/sorter processing, the meaningful information is that these banks have fallen behind in the reconcilement process, and they may even be hindering the reconcilement efforts of smaller banks by not providing rapid response to their inquiries.

A Comparison of Balancing Policy and Experience

Table 24 compares how bankers responded since 1977 to questions regarding their balancing procedures, their evaluation of the growth of the exception item

Table 21

Return and Exception Item Dollar Analysis by Area (During the Survey Week)

Area	Return Items: Total $ Discovered*	Return Items: Average $ Value/ Item†	Exception Items: Discovered: Total $ ‡	Exception Items: Discovered: Average $ Value/ Item §	Exception Items: Resolved: Total $ ‖	Exception Items: Resolved: Average $ Value/ Item #
Boston	$ 64,379,370	$ 632	$ 26,611,419	$ 4,755	$ 23,384,647	$ 5,259
New York	268,059,885	1,305	124,649,238	13,124	110,780,292	12,569
Philadelphia	85,932,001	497	91,966,458	4,995	15,767,363	2,940
Pittsburgh	36,284,485	636	3,653,926	4,157	3,496,351	4,241
Washington, D.C.	61,922,432	461	32,961,400	9,460	23,034,939	7,532
Atlanta	200,219,551	600	113,039,866	7,475	89,148,888	8.083
Chicago	290,618,532	942	889,053,331	129,397	860,260,602	129,755
Cleveland	99,822,125	740	44,692,348	6,966	24,311,128	8,650
Detroit	44,509,942	375	36,948,027	3,514	32,388,432	4,921
Minneapolis/St. Paul	**	**	**	**	**	**
St. Louis	156,763,017	667	92,626,326	13,002	261,640,463	45,675
Dallas	83,788,777	531	57,083,972	8,908	46,718,795	16,234
Houston	150,931,409	1,175	36,154,285	5,800	88,881,064	22,194
Los Angeles	98,118,411	518	37,538,778	3,455	36,051,771	4,046
San Francisco	169,156,548	492	250,081,358	12,050	160,977,853	10,731
Denver	47,024,528	936	146,236,540	66,461	108,031,474	56,867
Total 165 Banks	$1,857,531,013	—	$1,983,297,272	—	$1,884,874,062	—
1980 Average 165 Banks	$ 11,257,764	$ 813	$ 12,019,983	$19,262	$ 11,423,479	$23,885
1979 Average 149 Banks	13,476,748	727	9,396,938	14,802	7,242,381	18,747
1978 Average 146 Banks	10,132,913	659	4,695,338	7,442	4,430,940	8,790
1977 Average 161 Banks	16,712,033	1,208	5,069,149	7,104	5,415,808	9,092
1980 Median 165 Banks	$ 4,363,116	$ 496	$ 1,116,643	$ 3,350	$ 817,788	$ 3,448
1979 Median 149 Banks	3,765,978	409	723,152	2,968	662,562	2,970
1978 Median 146 Banks	3,845,017	417	773,775	2,186	606,187	2,262
1977 Median 161 Banks	3,004,271	372	664,753	2,304	524,255	2,202

*Q18; † Q18 ÷ Q17; ‡ Q41; § Q41 ÷ Q39; ‖ Q42; # Q42 ÷ Q40;** no respondents.

Table 22

The Age Distribution of Outstanding Exception Items

Dollars Outstanding

Months Outstanding	1978 146 Banks Dollars	1978 146 Banks Percent	1979 144 Banks Dollars	1979 144 Banks Percent	1980 143 Banks Dollars	1980 143 Banks Percent
0—1	$297,198,484	67.8%	$601,659,946	70.0%	$541,802,776	61.8%
1—2	68,699,210	15.7	156,719,650	18.2	171,240,399	19.5
2—4	42,270,491	9.7	57,975,289	6.8	85,763,209	9.8
4—6	19,464,360	4.4	29,496,372	3.4	43,450,668	5.0
Over 6	10,581,528	2.4	13,131,047	1.6	34,629,413	3.9
Total	$438,214,073	100.0%	$859,982,204	100.0%	$876,886,465	100.0%

Q67 = Q68 + Q69 + Q70 + Q71 + Q72

Items Outstanding

Months Outstanding	1978 146 Banks Items	1978 146 Banks Percent	1979 144 Banks Items	1979 144 Banks Percent	1980 143 Banks Items	1980 143 Banks Percent
0—1	87,535	25.3%	104,396	29.9%	88,122	22.8%
1—2	66,527	19.2	87,499	25.2	81,215	21.0
2—4	95,115	27.5	70,537	20.2	88,346	22.9
4—6	57,242	16.6	46,421	13.3	65,120	16.9
Over 6	39,319	11.4	39,914	11.4	63,320	16.4
Total	345,738	100.0%	348,767	100.0%	386,123	100.0%

Q73 = Q74 + Q75 + Q76 + Q77 + Q78

Table 23

The Age Distribution of Outstanding Exception Items by the Microfilming Method (Average Reporting Banks)

Dollars Outstanding

Months Outstanding	After Reader/Sorter Processing				Before Reader/Sorter Processing				During Reader/Sorter Processing			
	1979 Dollars	1980 Dollars	1979 Percent	1980 Percent	1979 Dollars	1980 Dollars	1979 Percent	1980 Percent	1979 Dollars	1980 Dollars	1979 Percent	1980 Percent
0 - 1	$773,975	$1,019,054	82%	74%	$1,709,250	$708,013	62%	87%	$5,117,991	$3,925,791	68%	64%
1 - 2	93,183	164,305	10	12	453,915	40,172	16	5	861,386	1,179,715	13	19
2 - 4	57,575	105,577	6	8	319,675	39,107	12	5	287,660	630,641	4	10
4 - 6	13,624	65,008	2	5	138,012	12,993	5	2	194,078	305,148	3	5
Over 6	6,875	23,468	7	2	153,345	12,333	5	1	120,487	135,798	2	2
Total	$945,232	$1,377,412	100%	100%	$2,774,197	812,618	100%	100%	$6,581,602	$6,177,093	100%	100%

Items Outstanding

Months Outstanding	After Reader/Sorter Processing				Before Reader/Sorter Processing				During Reader/Sorter Processing			
	1979 Items	1980 Items	1979 Percent	1980 Percent	1979 Items	1980 Items	1979 Percent	1980 Percent	1979 Items	1980 Items	1979 Percent	1980 Percent
0 - 1	176	373	41%	38%	412	174	26%	34%	851	666	31%	27%
1 - 2	112	231	26	24	281	129	18	26	784	537	29	22
2 - 4	100	159	23	16	336	103	22	20	383	549	14	22
4 - 6	33	100	8	10	190	46	12	9	318	327	12	13
Over 6	10	121	2	12	339	57	22	11	379	403	14	16
Total	431	984	100%	100%	1,558	509	100%	100%	2,715	2,482	100%	100%

Table 24

A Comparison of Balancing Policy and Experience

Balancing Procedures

	1977	1978	1979	1980
Always balance	6%	7%	5%	4%
Attempt to balance	81	85	78	85
Very seldom balance	13	8	17	11

Exception Item Growth

	1977	1978	1979	1980
Grown	51%	59%	67%	56%
Remained the same	30	26	26	25
Decreased	19	15	7	19

Adjustment Staff Size

		Number of People		
	168 Banks	1979	1980	Percent Gain or Loss
Grown	37%	1,234	1,450	+17.5%
Remained the same	49	898	898	
Decreased	14	650	578	−11.1
Total	100%	2,782	2,926	+ 5.2%

problem, and the status of personnel responsible for making adjustments in reconciliation. With an increased number of responding banks in 1980, the trend in balancing procedures continues consistent with past years.

The perceptions of bankers concerning exception item growth seem to be verified by the data; volumes are still high, but they have improved since last year. The detailed analysis of the adjustment staff size reveals that on the average 37% of the responding banks increased their staff by 17.5%, while 14% of the banks decreased their staff an average of 11.1%. The net overall gain in staff reported by the banks surveyed was 5.2% or 144 adjustment personnel. This increase of staff from 1979 to 1980 bolsters an overall net gain of adjustment personnel of 185 persons last year. Thus, the training time needed for new personnel combined with turnover in these labor intensive adjustment operations may have contributed significantly to the reversal in trend in resolution time for outstanding exception items.

Transit Holdover

Definition: Items in transit holdover are those items that were received by a bank before a deadline but were not processed by high- or low-speed systems in time to be sent for collection. These items would result in a loss of float to the bank but not to its customers.

Transit holdover reflects the speed with which checks are collected. Therefore, it is an important measure of a bank's processing efficiency. In 1980, the average transit holdover rate continued its steady decline to 1.9% of transit items processed, from an average rate of 2.5% in 1979. This figure was 9.4% in 1973. The average dollar amount of each item held over increased slightly for the second consecutive year to $678.00. The median dollar value also increased for the second straight year to $551.00 (Table 25).

As shown in Table 26, the median rate for transit holdover continued to improve to 0.3%. In 1980, 65.9% of all reporting banks reported a transit holdover rate of less than 1%.

Table 25

Transit Holdover by Area
(Percent of Total Transit Items)

	ADL Banks				All Banks			
Area	**1977**	**1978**	**1979**	**1980**	**1977**	**1978**	**1979**	**1980**
Boston	0.8%	1.0%	1.2%	3.6%	3.9%	0.5%	0.1%	1.1%
New York	9.5	9.6	5.1	6.2	7.2	6.2	2.0	2.5
Philadelphia	2.9	0.0	0.0	0.5	2.0	0.2	2.0	1.5
Pittsburgh	8.8	7.5	2.7	2.1	8.1	6.1	1.6	1.3
Washington, D.C.	*	2.1	0.0	*	1.5	3.3	1.9	0.9
Atlanta	0.3	0.5	4.5	2.2	4.2	2.2	5.8	2.9
Chicago	3.3	2.4	3.3	2.1	6.0	2.9	4.7	1.4
Cleveland	9.9	12.2	0.7	0.6	7.2	6.4	1.6	0.5
Detroit	9.9	1.8	1.4	1.1	6.9	1.6	1.1	0.7
Minneapolis/St. Paul	1.7	*	*	*	1.7	*	*	*
St. Louis	1.1	0.5	1.5	1.2	9.5	7.7	2.9	2.3
Dallas	0.2	2.3	0.1	0.2	0.4	2.3	0.5	1.0
Houston	5.8	2.3	1.7	0.1	4.4	2.1	7.3	3.3
Los Angeles	1.5	0.9	0.9	3.1	1.9	1.5	0.4	1.4
San Francisco	2.0	0.4	0.7	0.8	1.5	0.4	1.3	1.9
Denver	0.9	0.4	1.1	0.5	0.9	0.5	0.5	0.2
Total banks	44	43	30	36	168	153	153	170
Average	4.1%	3.0%	2.2%	2.3%	4.2%	2.8%	2.5%	1.9%

	1977	1978	1979	1980
Average dollar value of item held over	$1,181	$517	$661	$678
Median dollar value of item held over	$ 294	$270	$430	$551

*No respondents.

$$\frac{Q11}{Q10 + Q11} \times 100$$

Table 26

The Distribution of the Transit Holdover Rate
(Percent of Total Transit Items)

Rate	ADL Banks				All Banks			
	1977	1978	1979	1980	1977	1978	1979	1980
0% — 1%	18	22	14	20	88	93	93	112
1% — 2%	5	4	5	4	19	16	19	21
2% — 3%	6	2	2	3	12	8	9	13
3% — 4%	3	2	3	2	8	6	6	7
4% — 5%	2	1	1	1	7	5	3	3
5% — 10%	4	7	4	5	14	13	14	7
10% — 15%	5	1	1	1	8	5	5	2
15% — 20%	0	2	0	0	2	3	1	2
20% — 30%	0	2	0	0	6	4	1	3
Over 30%	1	0	0	0	4	0	2	0
Total banks	44	43	30	36	168	153	153	170
Average	4.1%	3.0%	2.2%	2.3%	4.2%	2.8%	2.5%	1.9%
Median	1.7%	0.9%	1.2%	0.8%	0.9%	0.5%	0.5%	0.3%

$$\frac{Q11}{Q10 + Q11} \times 100$$

Bank Labor Productivity Measurement

This section on check processing productivity presents an analysis of data gathered on the distribution of manpower according to the following major task groupings:

- Data control (balancing and correction).
- Encoding operations.
- Check receiving operations
- Reader/sorter operations.
- Cash letter make-up.
- Microfilming operations.
- On-us paying, filing, and return item processing.
- Exception item processing.
- Bulk filing.

The labor data reported were generally comprehensive. The problem of rounding off was eliminated by requesting the actual item count. Productive man-hours rather than man-days provided a more uniform base. Both the average (arithmetic mean) and median (midpoint value) of the distributions were made.* Caution should be exercised when comparisons are made between the following data and individual bank distributions.

Labor Intensiveness

The average total productivity of the 158 reporting banks for the combined check processing tasks declined 1.0% in1980 to 524.6 items processed per man-hour from 530.0 items processed per man-hour in 1979 (Table 27). The 1980 median rate, however, increased 6.6% to 522.7 items per man-hour, from 490.3 items in 1979. The decline in the average overall labor productivity rate was the first registered since 1974.

Table 28 presents the total productivity by geographic area. The ADL survey banks again showed a reduction in overall labor productivity. For all reporting banks, between 1979 and 1980, eight areas reported an increase in overall labor productivity.

* The median, by definition, is unaffected by extreme values and is useful as a measure of central tendencies when extreme values are present.

Table 27

Overall Labor Productivity

Checks per Man-Hour	Number of Banks 1977	1978	1979	1980
Under 100	0	0	1	0
100 — 200	1	0	3	2
200 — 300	12	8	12	13
300 — 400	27	31	37	31
400 — 500	37	31	27	24
Over 500	73	62	71	88
Total banks	150	132	151	158
Average	457.7	522.9	530.0	524.6
Median	493.9	474.2	490.3	522.7

Q15

Sum of Q43 through Q65

Table 28

Overall Labor Productivity by Area

Area	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
Boston	530.6	570.5	722.4	534.3	558.3	573.9	566.1	559.1
New York	376.6	380.2	397.0	500.0	394.4	394.7	392.7	551.6
Philadelphia	824.8	823.7	332.5	963.4	580.0	581.2	587.7	465.1
Pittsburgh	598.9	618.9	604.6	785.1	579.3	563.4	661.5	771.2
Washington, D.C.	*	435.2	460.0	571.9	499.2	555.5	522.0	565.5
Atlanta	376.0	459.9	541.9	677.0	472.7	496.2	513.0	567.9
Chicago	391.5	406.9	376.1	486.5	458.5	399.7	548.1	505.2
Cleveland	497.6	479.4	437.7	402.1	481.5	467.8	480.3	517.5
Detroit	329.6	357.0	379.2	343.0	379.1	376.2	529.5	488.3
Minneapolis/St. Paul	575.9	*	*	*	575.9	*	*	*
St. Louis	597.5	596.5	626.5	624.4	547.0	552.0	542.4	613.3
Dallas	805.9	954.8	723.2	658.9	715.3	871.2	628.6	602.3
Houston	661.4	861.4	677.9	587.6	485.4	730.0	492.5	462.2
Los Angeles	451.9	381.3	544.3	570.6	509.0	476.3	641.6	634.0
San Francisco	336.9	957.1	618.0	664.9	353.0	686.1	508.4	670.9
Denver	625.7	703.1	495.6	749.9	570.1	587.6	516.9	624.8
Total banks	44	43	30	35	150	118	151	158
Average	432.1	550.8	514.7	506.8	457.7	522.9	530.0	524.6
Median	489.2	508.6	529.0	570.6	493.9	474.2	490.3	522.7

*No respondents.

Q15

Sum of Q43 through Q65

Labor Distribution

A distribution of the percentage of labor among various tasks performed is shown in Table 29. In order to examine the productivity of certain elements of the check processing operation more closely, two new tasks were added to the 1980 survey: check receiving (Task C) and bulk filing (Task H). The 1980 average results for all banks, outlined in Table 29, show that the separation of the check receiving function seems to have completely affected the encoding operation (Task B). While the separation of the bulk filing task affects on-us paying, filing, and return item processing (Task F), a review of these statistics in the future should prove interesting. One would expect that the usage of bulk filing techniques will tend to increase, and that the implementation of bulk filing will tend to reduce the percentage of labor required by the bookkeeping tasks, as evidenced by the decreased percentage of Task F from 1979 to 1980.

Data Control—Balancing and Correction

In 1980, both the average and median rates for labor productivity in the balancing and correction functions increased over 1979 (Table 30). The average number of checks processed per man-hour in 1980 was 2,880.4, an increase of 17.3% from 1979, while the median number of checks processed per man-hour in 1980 was 3,556.5, an increase of 22.9% from 1979.

Encoding Operations

Table 31 presents the combined average labor productivity for single-pocket and multipocket encoding machines. The 1980 average number of items encoded per man-hour was 864.7, a slight increase over the 1979 rate of 859.1 items. The median rate also improved by 7.7% over 1979; however, these productivity increases are not significant when compared with the results from previous years.

Tables 32 and 33 show the encoding productivity for single-pocket and multipocket machines. The average number of items encoded on a single-pocket machine was 863.9 items per man-hour, a decrease from the 881.4 items per man-hour in 1979, with the decrease continuing from the 929.6 item level reported in 1977. The median rate of encoding labor productivity on single-pocket machines increased 5% during the 1980 survey period, but, again, the 1977 median was not achieved. Both the average and median rates for encoding labor productivity on multipocket machines increased in 1980, but productivity here also lags behind the 1977 reported performance.

Table 34 presents the number of items encoded per man-hour by the percent of pre-encoded items received. In 1980, the banks that received the highest percentage of encoded items reported the lowest encoding productivity; however, the middle groups achieved some exciting productivity gains.

Table 29

The Distribution of Labor by Overall Labor Productivity

Checks per Man-Hour*	Number of Banks	Percent of Labor by Tasks†								
		A	B	C	D	E	F	G	H	I
Under 200	2	6.2	53.1	2.0	1.2	2.4	15.5	0.1	9.3	10.3
200 — 300	13	19.7	23.7	6.2	3.1	8.2	26.7	4.0	0.7	7.7
300 — 400	31	15.3	28.2	3.8	5.2	7.4	28.0	6.5	2.9	2.8
400 — 500	24	19.5	30.9	3.3	3.7	4.7	23.1	4.8	2.6	7.3
500 — 600	28	17.7	29.0	4.6	5.1	7.1	25.2	6.0	2.8	2.6
600 and over	60	16.7	29.6	4.2	4.5	7.2	18.4	9.2	5.4	4.8
Average, all banks 1980	158	18.3	26.2	4.5	4.5	6.9	22.7	6.6	3.2	7.0
Average, all banks 1979	151	18.4	30.4	‡	4.2	7.5	27.9	6.6	‡	5.0
Average, all banks 1978	132	20.0	26.7	‡	3.9	7.4	28.2	6.3	‡	7.5
Average, all banks 1977	150	20.1	26.3	‡	3.5	7.5	30.5	6.4	‡	5.8
ADL 1980	35	19.9	21.7	5.2	4.9	6.7	20.8	6.9	2.9	11.0
ADL 1979	30	23.3	25.7	‡	4.8	7.8	22.6	9.0	‡	6.7
ADL 1978	43	21.8	23.8	‡	4.4	8.0	26.7	6.7	‡	8.6
ADL 1977	44	21.0	23.6	‡	3.8	7.3	32.5	6.4	‡	5.5

$\frac{Q15}{\text{Sum of Q43 through Q65}}$; ‡No comparable data collected.

† Tasks

A. — Data control — balancing and correction $\frac{Q45 + Q46}{\text{Sum of Q43 through Q65}} \times 100$

B. — Encoding operations $\frac{Q47 + Q48 + Q51 + Q52}{\text{Sum of Q43 through Q65}} \times 100$

C. — Check receiving $\frac{Q49 + Q50}{\text{Sum of Q43 through Q65}} \times 100$

D. — Reader/sorter operations $\frac{Q53 + Q54}{\text{Sum of Q43 through Q65}} \times 100$

E. — Cash letter make-up and microfilming operations $\frac{Q55 + Q56 + Q57 + Q58}{\text{Sum of Q43 through Q65}} \times 100$

F. — On-us paying, filing, and return item processing $\frac{Q59 + Q60 + Q63 + Q64}{\text{Sum of Q43 through Q65}} \times 100$

G. — Exception item processing $\frac{Q43 + Q44}{\text{Sum of Q43 through Q65}} \times 100$

H. — Bulk filing $\frac{Q61 + Q62}{\text{Sum of Q43 through Q65}} \times 100$

I. — Non-officer processing time not including "A" through "H" tasks $\frac{Q65}{\text{Sum of Q43 through Q65}} \times 100$

Table 30

Balancing and Correction Labor Productivity

Checks per Man-Hour	1977	1978	1979	1980
Under 1,000	2	2	9	5
1,000—2,000	36	29	24	27
2,000—3,000	48	42	47	37
3,000—4,000	19	22	23	21
4,000—5,000	19	16	12	21
5,000—6,000	6	10	2	13
6,000—7,000	5	4	5	9
7,000—8,000	2	6	5	6
Over 8,000	24	18	24	28
Total banks	161	149	151	167
Average	2,385.5	2,558.9	2,455.9	2,880.4
Median	2,822.6	3,027.9	2,894.6	3,556.5

$$\frac{Q9}{Q45 + Q46}$$

Table 31

Encoding Labor Productivity

	Number of Banks			
Checks per Man-Hour	1977	1978	1979	1980
Under 400	2	2	8	2
400— 500	4	1	3	9
500— 600	12	19	14	8
600— 700	20	14	24	15
700— 800	24	27	23	26
800— 900	32	29	31	27
900—1,000	19	28	17	27
Over 1,000	52	31	31	51
Total banks	165	151	151	165
Average	841.2	927.6	859.1	864.7
Median	866.9	833.9	815.8	878.7

$$\frac{Q3 + Q4 + Q5 + Q6}{Q47 + Q48 + Q51 + Q52}$$

Table 32

Encoding Labor Productivity for the Single-Pocket Machine

Checks per Man-Hour	Number of Banks 1977	1978	1979	1980
0— 100	0	0	1	2
100— 200	0	0	0	0
200— 300	0	1	0	1
300— 400	3	0	3	1
400— 500	3	1	2	6
500— 600	9	11	9	8
600— 700	16	14	24	9
700— 800	18	21	19	27
800— 900	24	27	27	25
900—1,000	21	27	16	25
1,000—1,100	12	11	16	17
1,100—1,200	14	8	4	14
Over 1,200	24	11	14	20
Total banks	144	132	135	155
Average	929.6	844.9	881.4	863.9
Median	896.0	864.2	849.1	891.5

$$\frac{Q3 + Q4}{Q47 + Q48}$$

Table 33

Encoding Labor Productivity for the Multipocket Machine

Checks per Man-Hour	Number of Banks 1977	1978	1979	1980
0— 100	2	3	3	3
100— 200	2	3	4	6
200— 300	8	3	5	4
300— 400	5	6	6	5
400— 500	7	7	3	6
500— 600	6	10	4	9
600— 700	11	5	6	6
700— 800	7	7	9	7
800— 900	18	11	8	7
900—1,000	5	4	0	4
1,000—1,100	2	1	1	1
1,100—1,200	2	2	1	2
Over 1,200	5	3	2	8
Total banks	80	65	52	68
Average	696.1	656.5	627.8	685.4
Median	698.3	620.6	610.2	616.2

$$\frac{Q5 + Q6}{Q51 + Q52}$$

Table 34

Items Encoded per Man-Hour by Percent of Pre-encoded Items

Percent of Incoming Items Already Encoded*	Number of Banks				Items Encoded per Man-Hour†			
	1977	1978	1979	1980	1977	1978	1979	1980
80%—100%	7	9	11	16	794.0	735.0	652.2	776.0
60%— 80%	45	39	36	40	870.8	809.9	788.6	955.4
40%— 60%	64	64	52	60	823.9	776.5	868.5	1,040.7
0%— 40%	48	38	52	49	849.6	874.8	943.1	885.0
Total banks	164	150	151	165				
Average productivity					841.1	803.3	859.1	864.7

* $\frac{Q1 + Q2}{Q9} \times 100$

† $\frac{Q3 + Q4 + Q5 + Q6}{Q47 + Q48 + Q51 + Q52}$

Check Receiving Operations

Table 35 presents productivity figures for the check receiving function. These operational data were surveyed for the first time in 1980, with inconsistent results. The average number of checks processed per man-hour was 6,518.6, whereas the median number reported was 9,112.7. In many cases, check receiving departments initially handle both encoded and pre-encoded deposits, and then forward the work to either the encoding or the reader/sorter job stream. The wording of the question may have caused the inconsistencies, although the extent to which batch headers and receipts are prepared in this operation may be a contributing factor to the variance.

Table 35
Check Receiving Productivity (Pre-encoded Deposits)

Checks per Man-Hour	Number of Banks 1980
Under — 5,000	41
5,000 — 10,000	44
10,000 — 15,000	34
15,000 — 20,000	11
20,000 — 25,000	12
25,000 — 30,000	3
Over 30,000	18
Total banks	163
Average	6,518.6
Median	9,112.7

$\frac{Q1 + Q2}{Q49 + Q50}$

Reader/Sorter Operations

The average reader/sorter labor productivity again exhibited its variable nature by dropping to 11,740.3 items per man-hour in 1980 from 12,526.9 in 1979 (Table 36). The median rate increased significantly (19.4%) from 1979 to 19,917.3 items in 1980. Of the reporting banks, 72% processed over 10,000 items per man-hour, compared with 78% in 1976.

Table 36

Reader/Sorter Labor Productivity

	Number of Banks			
Checks per Man-Hour	**1977**	**1978**	**1979**	**1980**
Under 5,000	8	7	17	18
5,000—10,000	32	29	28	29
10,000—15,000	25	26	25	14
15,000—20,000	25	14	12	22
20,000—25,000	16	19	12	13
25,000—30,000	13	19	19	18
Over 30,000	45	36	38	52
Total banks	164	150	151	166
Average	13,311.5	12,423.4	12,526.9	11,740.3
Median	18,466.7	18,309.6	16,675.1	19,917.3

Q7

Q53 ÷ Q54

Cash Letter Make-Up and Microfilming

Combined cash letter make-up and microfilming labor productivity is shown in Table 37. The average rate of items processed per man-hour increased slightly in 1980. The average rate was 6,323.3 items per man-hour, while the median rate decreased slightly to 8,203.5 items.

Separate tables are presented for cash letter make-up (Table 38) and microfilming (Table 39). Both the average and the median rates for cash letter make-up productivity increased slightly in 1980. The average number of items microfilmed per man-hour decreased sharply from 12,609.1 items per man-hour in 1979 to 7,933.1 items in 1980. The median rate, however, increased slightly in 1980, rising to 8,924.2 items per man-hour from the 1979 rate of 8,790.3 items.

Approximately 13% of the microfilmed items were filmed before reader/sorter processing, 11% were microfilmed after reader/sorter processing, and nearly 76% of the items were microfilmed during reader/sorter processing. In 1979, 72% of the items were microfilmed during reader/sorter processing.

Table 37

Cash Letter Make-Up and Microfilming Labor Productivity

Checks per Man-Hour	Number of Banks 1977	1978	1979	1980
Under 1,000	0	0	1	0
1,000— 2,000	0	2	6	5
2,000— 3,000	7	7	5	10
3,000— 4,000	8	11	10	10
4,000— 5,000	14	5	11	18
5,000— 6,000	12	18	13	12
6,000— 7,000	10	12	9	12
7,000— 8,000	18	18	13	13
8,000— 9,000	17	6	12	10
9,000—10,000	6	13	10	13
Over 10,000	69	51	62	64
Total banks	161	143	152	167
Average	7,305.9	7,262.3	6,261.0	6,323.3
Median	8,590.7	7,823.4	8,612.8	8,203.5

$$\frac{Q10 + Q11 + Q19 + Q20}{Q55 + Q56 + Q57 + Q58}$$

Table 38

Cash Letter Make-Up Labor Productivity

Checks per Man-Hour	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
0— 2,000	0	4	1	1	6	8	11	8
2,000— 4,000	8	6	5	8	26	24	26	28
4,000— 6,000	16	17	7	9	33	34	22	29
6,000— 8,000	7	5	7	4	25	17	21	23
8,000—10,000	1	4	6	6	13	15	20	24
10,000—12,000	3	4	0	1	15	16	12	15
12,000—15,000	3	1	2	4	13	10	12	10
Over 15,000	5	2	2	3	30	24	28	32
Total banks	43	43	30	36	161	148	152	169
Average	5,873.1	5,073.7	4,996.5	5,191.9	5,993.6	5,626.3	5,556.6	5,768.3
Median	5,926.8	5,424.9	6,495.7	6,004.4	7,329.8	6,878.2	7,514.7	7,717.9

$$\frac{Q10 + Q11}{Q55 + Q56}$$

Table 39

Microfilming Labor Productivity

Checks per Man-Hour	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
0— 2,000	4	13	5	6	12	24	20	28
2,000— 4,000	5	2	3	5	10	6	16	14
4,000— 6,000	7	6	3	2	18	13	15	12
6,000— 8,000	6	2	4	1	22	9	11	11
8,000—10,000	0	3	2	5	14	20	13	14
10,000—12,000	6	6	0	1	19	27	12	11
12,000—15,000	6	4	1	1	22	18	12	14
Over 15,000	10	7	7	7	48	30	35	39
Total banks	44	43	25	28	165	147	134	143
Average	7,915.1	12,222.7	14,439.7	9,132.2	9,247.8	11,129.7	12,609.1	7,933.1
Median	8,976.1	6,543.4	6,358.0	8,133.1	10,873.8	10,175.6	8,790.3	8,924.2

$$\frac{Q19 + Q20}{Q57 + Q58}$$

On-Us Processing—Paying, Filing, and Return Items

The average on-us labor productivity declined 9.5% in 1980 to 965.4 checks processed per man-hour. The median rate of on-us processing labor productivity increased significantly from 705.6 items per man-hour in 1979 to 933.3 items in 1980 (Table 40). The analysis of the relationship between labor productivity for processing on-us items and the percentage of on-us items received by the banks (Table 41) continues to show an improving trend relative to the number of on-us items processed by the banks.

Table 40

On-Us Processing Labor Productivity
(Paying, Filing, and Return Item Processing)

Checks per Man-Hour	Number of Banks 1977	1978	1979	1980
Under 200	2	0	8	3
200— 300	4	4	5	7
300— 400	13	13	14	5
400— 500	19	16	20	15
500— 600	21	19	18	15
600— 700	17	20	9	12
700— 800	12	11	14	9
800— 900	13	7	10	9
900—1,000	13	10	12	11
Over 1,000	43	43	41	74
Total banks	157	143	151	160
Average	645.2	830.6	1,066.3	965.4
Median	721.4	697.7	705.6	933.3

$$\frac{Q12 + Q13 + Q14}{Q59 + Q60 + Q63 + Q64}$$

Table 41

The Percent of On-Us Items Received and On-Us Processing Labor Productivity

Percent of On-Us Items Received*	Number of Banks				Checks Processed per Man-Hour†			
	1977	1978	1979	1980	1977	1978	1979	1980
Under 20%	15	12	11	17	532.1	586.5	564.2	685.6
20%—40%	51	43	50	47	649.6	623.6	785.1	1,220.0
40%—60%	67	61	60	64	707.7	851.4	1,225.8	1,917.6
Over 60%	24	26	30	32	583.5	1,137.1	1,400.2	2,124.5
Total banks	157	142	151	160				
Average productivity					645.2	830.6	1,006.3	965.4

* $\frac{Q12 + Q13 + Q14}{Q15} \times 100$

†Average within each percentage group.

$$\frac{Q12 + Q13 + Q14}{Q59 + Q60 + Q63 + Q64}$$

Bulk Filing Labor

The 1980 survey was constructed in such a manner that bulk filing labor productivity *per se* could not be established, since the banks were not asked to report bulk filed items separately from those items paid and filed in the conventional manner. However, 87 banks, 51% of the respondents, accomplish some bulk filing. Due to the variance in the number of accounts subject to bulk filing at the different banks, there is a wide range of man-hours devoted to these tasks. For the 1980 reporting banks, an average of 274.8 clerical and 30.4 supervisory man-hours were devoted to bulk filing during the survey period.

Table 42

Bulk Filing Labor Productivity

	Clerical Man-Hours*	Supervisory Man-Hours†
	1980	1980
Low	1	0
High	3,806	314
Range	3,805	314
25th Quartile	37	0
75th Quartile	336	40
Total banks	87	87
Average	274.8	30.4
Median	120.0	10.0

*Q61; †Q62

Exception and Return Item Processing

As shown in Table 43, the average productivity in the exception and return item processing area decreased by 23% in 1980 to 26.5 items per man-hour, while the median rate decreased by 14% to 23.8 items per man-hour.

The initial trend for return item productivity, as shown in Table 44, is disappointing. The average labor productivity fell 36.4% to 53.9 items processed per man-hour in 1980 from 84.8 items in 1979, although the median return item labor productivity decreased only slightly from 48.7 items per man-hour in 1979 to 47.4 items in 1980. It is possible that the sharp increase of return items discovered in 1979 may have caused some turnover in a labor intensive processing environment, thus creating productivity losses in 1980 as new staff members were being trained.

Table 45 presents an analysis of the number of items resolved per man-hour compared to the exception and return items discovered. The constant trend in exception item productivity is shown in Table 46.

Table 43

Exception and Return Item Productivity

	ADL Banks				All Banks			
Items per Man-Hour	**1977**	**1978**	**1979**	**1980**	**1977**	**1978**	**1979**	**1980**
Under 5	0	0	1	0	0	2	5	1
5— 10	2	0	0	0	15	9	13	16
10— 15	5	4	2	4	21	20	16	19
15— 20	2	6	4	5	31	28	19	27
20— 25	3	3	4	5	17	21	16	23
25— 30	8	6	2	6	26	17	11	20
30— 35	4	7	7	3	10	15	20	16
35— 40	4	5	1	2	7	10	11	8
40— 45	5	3	6	4	7	5	12	10
45— 50	0	0	1	2	5	1	5	5
50—100	8	9	0	3	15	15	7	13
Over 100	2	0	2	2	3	3	8	6
Total banks	43	43	30	36	157	146	143	164
Average	25.1	29.0	36.3	29.1	23.3	25.6	34.4	26.5
Median	32.1	31.2	29.9	28.4	23.4	23.1	27.8	23.8

$$\frac{Q17 + Q39 + Q40}{Q43 + Q44 + Q63 + Q64}$$

Table 44

Return Item Productivity

Items per Man-Hour	ADL Banks 1979	ADL Banks 1980	All Banks 1979	All Banks 1980
Under 5	1	0	3	2
5— 10	0	0	4	9
10— 15	0	0	5	4
15— 20	0	0	5	4
20— 25	1	1	12	14
25— 30	0	3	8	17
30— 35	1	1	13	10
35— 40	1	1	7	8
40— 45	1	1	11	9
45— 50	4	3	6	8
50—100	16	20	45	52
Over 100	5	6	26	29
Total banks	30	36	145	166
Average	78.1	68.4	84.8	53.9
Median	61.6	64.4	48.7	47.4

$$\frac{Q17}{Q63 + Q64}$$

Table 45

Exception and Return Item Productivity by Rate Discovered

Exception Item Rate per 100,000 Items Sent*	Number of Banks 1977	1978	1979	1980	Items Resolved per Man-Hour† 1977	1978	1979	1980
0— 500	17	15	7	8	12.7	20.3	41.2	29.2
500—1,000	88	77	62	76	21.0	19.2	30.0	27.3
1,000—1,500	32	29	39	55	27.4	28.6	30.5	32.7
1,500—2,000	12	16	18	17	21.5	34.0	45.1	34.8
2,000—2,500	5	5	9	5	50.7	59.8	52.6	77.8
2,500—3,000	2	2	3	2	55.2	37.2	38.5	39.1
Over 3,000	1	1	5	0	16.9	29.9	37.5	0.0
Total banks	157	145	143	163				
Average					23.3	25.7	34.4	26.3
Median					23.4	23.3	27.8	23.7

* $\frac{Q17 + Q39}{Q10} \times 100{,}000$

† $\frac{Q17 + Q39 + Q40}{Q43 + Q44 + Q63 + Q64}$

Table 46

Exception Item Productivity

Items per Man-Hour	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
0— 2	8	9	10	13	40	43	54	55
2— 3	9	4	4	6	20	24	21	30
3— 4	5	3	5	2	17	16	18	18
4— 5	4	12	4	2	12	18	10	11
5—10	8	11	5	8	24	30	26	29
10—15	6	1	0	2	16	6	7	6
15—20	0	0	0	2	3	3	1	4
Over 20	3	3	2	1	8	8	13	14
Total banks	43	43	30	36	160	148	150	167
Average	3.7	3.3	2.7	3.2	3.3	3.0	2.9	3.1
Median	3.9	4.4	3.2	2.9	3.0	3.4	3.0	3.0
							Q39 + Q40	
							Q43 + Q44	

Automated Reject Processing Productivity

The number of banks reporting automated reject processing capabilities increased 61.8% in 1980 (total respondents increased by 11.1%). The productivity experienced by the 110 reporting banks in automated reject processing is outlined in Tables 47 and 48. The average productivity decreased slightly to 307.9 items per man-hour, while the median fell to 357.2 items per man-hour, a 9.6% decline from the 1979 level. The decline in the productivity levels may be explained by the large number of new system users. The productivity rates that are given also reflect the processing of other rejects by manual methods.

Labor Productivity Summary

The "average" bank responding to the 1980 survey used approximately 0.2 more man-hours per 10,000 items processed than in 1979. The average expenditure of man-hours in check processing per 10,000 items processed had been steadily declining during the survey years because of productivity increases and technological advances. It is anticipated that as the usage of such systems as automated reject processing and bulk filing grows, and as bankers become more familiar with system operations and applications, productivity gains will continue to be realized.

As previously discussed, this productivity plateau may be partially explained by

Table 47

Reject Processing Productivity by Area

Area	ADL Banks 1978	ADL Banks 1979	ADL Banks 1980	All Banks 1978	All Banks 1979	All Banks 1980
Boston	631.4	471.8	255.2	606.2	586.1	345.9
New York	238.5	375.0	236.3	241.9	439.5	375.6
Philadelphia	428.1	*	203.7	383.7	408.8	397.0
Pittsburgh	705.1	507.9	737.2	705.1	527.6	737.2
Washington, D.C.	*	*	*	305.3	335.3	383.7
Atlanta	225.2	299.6	358.1	314.9	290.1	554.6
Chicago	414.5	1,100.0	333.9	398.9	881.4	355.1
Cleveland	492.2	*	158.9	533.2	880.3	281.7
Detroit	675.8	304.2	429.4	675.8	461.0	369.7
Minneapolis/St. Paul	*	*	*	*	*	*
St. Louis	*	*	374.2	441.0	500.7	439.3
Dallas	255.6	298.6	669.8	260.0	298.6	477.6
Houston	252.4	341.0	290.3	292.8	475.5	610.1
Los Angeles	1,002.8	305.5	489.7	240.9	824.3	962.9
San Francisco	200.1	211.9	190.8	225.0	350.1	365.1
Denver	695.9	*	500.6	695.9	399.1	641.4
Total banks	24	18	25	67	68	110
Average	267.9	282.0	315.5	296.9	308.6	307.9
Median	411.3	299.5	323.6	420.4	395.1	357.2

*No respondents.

Q94
Q95

Table 48

Reject Processing Productivity

Checks per Man-Hour	Number of Banks 1978	1979	1980
Under 100	1	3	6
100—200	8	8	20
200—300	17	15	19
300—400	5	9	16
400—500	10	10	16
500—600	7	6	10
600—700	6	2	5
Over 700	13	15	18
Total banks	67	68	110
Average	296.9	308.6	307.9
Median	420.4	395.1	357.2

Q94
Q95

turnover and volume increases in the labor intensive areas of returns and exception item processing.

Average Man-Hour Expenditure per 10,000 Items*

Tasks	Man-Hours			
	1977	1978	1979	1980
Balancing and corrections	4.4	4.1	3.5	3.5
Encoding	5.7	5.5	5.7	5.0
Check receiving	‡	‡	‡	0.9
Reader/sorter operations	0.8	0.8	0.8	0.9
Cash letter make-up and microfilming	1.6	1.5	1.4	1.3
On-us paying, filing, and return items processing	6.6	5.8	5.3	4.3
Exception item processing	1.4	1.3	1.0	1.3
Bulk filing	‡	‡	‡	0.6
Miscellaneous labor	1.3	1.5	1.2	1.3
Total man-hours†	21.8	20.5	18.9	19.1

*Total man-hours times the distribution of labor from Table 29.

†10,000 items divided by the average overall productivity from Table 27.

‡No comparable data collected.

New Performance Measurement

Reject Reentry

Several banks have the capability of high-speed reentry of prime pass rejects under software system control. Although the rejected item should be properly merged into its appropriate place in the captured data base, some banks have experienced difficulties in the subsequent balancing operation as a result of using high-speed reject reentry.

The 1980 survey found that 68 of the reporting banks (40%) were using the system. Furthermore, the average reject rate *after* high-speed reentry was 0.8% for both the Arthur D. Little banks and for the larger sample of banks (Table 49). Table

Table 49

Reject Rate After Reader/Sorter High-Speed Reject Reentry by Area

Area	ADL Banks 1980	All Banks 1980
Boston	0.2%	0.1%
New York	1.7	1.4
Philadelphia	*	0.7
Pittsburgh	1.6	1.6
Washington, D.C.	0.9	1.0
Atlanta	1.7	1.0
Chicago	0.9	1.0
Cleveland	0.9	0.8
Detroit	0.7	0.4
Minneapolis/St. Paul	*	*
St. Louis	0.5	0.7
Dallas	*	*
Houston	0.1	0.5
Los Angeles	0.2	0.3
San Francisco	0.2	0.4
Denver	1.4	1.0
Total banks	23	68
Average	0.8%	0.8%

*No respondents

$$\frac{Q28}{Q7} \times 100$$

50 shows the distribution of the reject rate after high-speed reentry. No comments were received concerning problems with this system.

A bank that does not use high-speed reentry might employ other means to modify the captured data base with the required MICR line information from rejects. Some banks use CRT operators to key the information through terminals. This method of on-line reject reentry has several disadvantages: low productivity, propensity for human error, and training time. When the number of rejects has been significantly reduced by high-speed reentry, however, the disadvantages of CRT on-line reject reentry are, at least, minimized.

Table 50

The Distribution of the Reject Rate After High-Speed Reject Reentry

Reject Rate	ADL Banks 1980	ALL Banks 1980
0%-0.1%	2	11
0.1%-0.3%	8	14
0.3%-0.5%	0	5
0.5%-0.8%	1	7
0.8%-1.0%	4	10
1.0%-1.5%	1	8
1.5%-2.0%	4	6
2.0%-2.5%	3	5
2.5%-3.0%	0	2
Over 3.0%	0	0
Total banks	23	68
Average	0.8	0.8
Median	0.8	0.7

*No respondents.

$$\frac{Q28}{Q7} \times 100$$

Tables 51 and 52 show the average number of reentered rejects from the prime pass and from subsequent passes, respectively, according to area of the country. In Table 53, the average reject reentry productivity is given by geographic area, while Table 54 relates the productivity distribution of banks according to checks processed per man-hour. The average rate of reject reentry was determined to be 195.3 items per man-hour, and the median rate was 286.0 items per man-hour. The wide range in productivity is explained by comparing the key entry method of on-line reentry as opposed to automated reject processing.

Table 51

Average Number of Rejects Reentered from the First Pass by Area

Area	All Banks 1980
Boston	35,326.8
New York	48,795.5
Philadelphia	18,906.7
Pittsburgh	24,792.0
Washington, D.C.	24,053.1
Atlanta	27,886.1
Chicago	30,996.0
Cleveland	37,801.1
Detroit	25,025.6
Minneapolis/St. Paul	*
St. Louis	18,523.3
Dallas	86,844.0
Houston	15,633.1
Los Angeles	59,173.9
San Francisco	59,767.4
Denver	29,711.0
Total banks	124

*No respondents.

Table 52

Average Number of Rejects Reentered from Subsequent Passes by Area

Area	All Banks 1980
Boston	6,193.0
New York	1,202.4
Philadelphia	2,098.4
Pittsburgh	0.0
Washington, D.C.	0.0
Atlanta	1,634.8
Chicago	1,220.7
Cleveland	344.3
Detroit	0.0
Minneapolis/St. Paul	*
St. Louis	0.0
Dallas	0.0
Houston	5,722.5
Los Angeles	2,452.6
San Francisco	1,460.9
Denver	2,617.5
Total banks	124

*No respondents.

Table 53

Reject Reentry Productivity by Area

Area	All Banks 1980
Boston	267.3
New York	358.7
Philadelphia	303.5
Pittsburgh	219.8
Washington, D.C.	259.7
Atlanta	377.5
Chicago	729.4
Cleveland	285.2
Detroit	368.8
Minneapolis/St. Paul	*
St. Louis	207.6
Dallas	426.4
Houston	406.7
Los Angeles	426.0
San Francisco	353.3
Denver	355.4
Total banks	122
Average	195.3
Median	286.0

*No respondents.

Q86
Q87

Table 54

Reject Reentry Productivity

Checks per Man-Hour	Number of Banks 1980
Under 100	15
100-200	33
200-300	14
300-400	21
400-500	14
500-600	9
600-700	4
Over 700	12
Total banks	122
Average	195.3
Median	286.0

Q86
Q87

Automated Reject Processing

The main features of an automated reject processing system include:

- Machines stripping of the rejects.
- OCR reading of the original MICR line.
- Automated encoding of MICR data on the strip.
- Automated reentering of the MICR line information in the appropriate place on the captured data base.

Table 55 outlines the response to the survey questionnaire on the usage of automated reject processing equipment, with 18% of the respondents using only automated equipment, and 45% using automated equipment in combination with manual processing methods. Of the 37% respondents not using automated reject processing, 36% plan to acquire the capability, with an additional 36% still undecided.

In 58% of the respondent banks using automated equipment, reject processing is accomplished on-line. Of these same banks, 15% repair all fields in the MICR line; 13% do not repair all fields in the MICR line; 44% repair all fields for selected banks; and 28% repair all fields only if operator intervention is not required.

Table 55

Automated Reject Processing

Use of Automated Processing	**1980**
No	37%
Yes, exclusively	18
Yes, in combination with manual methods	45
If no, do you plan to acquire automated reject processing?	
No	28%
Yes	36
Undecided	36
If yes, automated reject processing is:	
On-line	58%
Off-line	42
Do you repair all fields, including the account number?	
No	13%
Yes	15
Yes, on selected banks	44
Yes, but only if operator intervention is not required	28

Appendices

Appendix A

1980 Survey Questionnaire

1980
Check Collection Performance Measurement Survey
and
Survey of Electronic Funds Transfer Transactions

Bank Administration Institute

INSTRUCTIONS

1. Complete page 3 and the data collection questions for each day of the week, Monday through Saturday. Be sure to include the date in the space provided at the top of each column in Section I.

2. Complete page 16, 17, and 18 at end of week.

3. Mail completed survey booklet to:

   Constance Blecha, Research Assistant
   BANK ADMINISTRATION INSTITUTE
   P.O. Box 500, Park Ridge, Illinois 60068
   Telephone: 312/693-7300

4. Please read definitions before completing questionnaire.

BANK ADMINISTRATION INSTITUTE

Check Collection and EFT Transactions Performance Measurement

Date _____

Bank Name _____

Street Address _____

City _____

Name _____ Title _____
(of person to be contacted about survey data)

Phone _____

Name _____ Title _____
(of person to whom completed survey is to be returned, if different from above)

Number of DDA accounts in your bank _____

Number of DDA accounts in other banks for which you are doing the processing. _____

Please describe any significant check processing problems you are experiencing. Consider transportation, personnel, equipment, interbank exchange procedures, accuracy, theft, fraud, or security.

_____

_____

_____

_____

_____

_____

INCOMING WORK includes the check processing items received from the Federal Reserve, nonlocal banks, local banks and items included in all deposits made in your bank. Do *not* include the DDA items you process for other banks when you provide the accounting service on a fee basis. Do *not* include extra services performed over and above the check processing for lock box deposits, credit cards, preauthorized payments, account reconcilement, or wire transfer.

I. INCOMING WORK

QUESTION	Question Relationship	Monday Date_____	Tuesday Date_____
1. Number of amount encoded items received from other banks and customers who do their own encoding sent to the reader/sorter.	____		
2. Number of amount encoded items received from other banks and customers who do their own encoding *not* sent to the reader/sorter.	____		
3. Number of items your bank encoded on single-pocket machines sent to the reader/sorter.	____		
4. Number of items your bank encoded on single-pocket machines *not* sent to the reader/sorter.	____		
5. Number of items your bank encoded on multipocket machines sent to the reader/sorter.	____		
6. Number of items your bank encoded on multipocket machines *not* sent to the reader/sorter.	____		
7. Number of first-pass items processed on the reader/sorter.	1+3+5=7		
8. Number of items that were *not* processed by the reader/sorter.	2+4+6=8		
9. Number of items received by your bank.	7+8=9		

DATA COLLECTION FORM

Please report all actual counts. Do *not* round off.

ITEMS consist of cashed and deposited checks, deposit tickets, control tickets, and other items that are normally processed commingled with checks on proof and/or encoding equipment. For batches use standard estimating techniques to determine item count.

Wednesday Date_____	**Thursday** Date_____	**Friday** Date_____	**Saturday** Date_____	**WEEKLY TOTAL**
				1.
				2.
				3.
				4.
				5.
				6.
				7.
				8.
				9.

Please report all actual counts. Do *not* round off.

OUTGOING WORK is the disposition of all items you received and processed today.

TRANSIT ITEMS are the items you processed both high speed and low speed that were "on-others."

II. OUTGOING WORK

QUESTION	Question Relationship	Monday	Tuesday
10. Total number of transit items (on others) sent.	____		
11. Total number of transit holdover (on others) items.	____		
12. Total number of on-us items paid and filed (from previous day's incoming work).	____		
13. Total number of on-us items held over.	____		
14. Total number of payable-thru drafts processed.	____		
15. Total number of items processed today.	10+11+12+ 13+14=15		
16. Total dollar value of items in No. 11.	____	$	$

III. TRANSIT RETURNS

TRANSIT RETURN—items returned today for any reason that were originally sent out as transit items from this bank.

QUESTION	Question Relationship	Monday	Tuesday
17. Total number of return items today.	____		
18. Total dollar value of items in Question No. 17.	____	$	$

TRANSIT HOLDOVERS—items received by your bank prior to a deadline but which were not processed by high-or low-speed systems in time to be sent for collection at that deadline. These would result in a loss of float to the bank but not to its customer. Do not add today's holdover items to the next day's count.

ON-US ITEMS—those items drawn on your bank; includes all types of checking accounts, cashier checks, deposit tickets, and control tickets.

ON-US ITEMS HELD OVER—items received by your bank that were not processed in time to be posted to your accounts on the day they were received.

Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
				10.
				11.
				12.
				13.
				14.
				15.
$	$	$	$	$ 16.

Note: Due to rounding, estimating, and so on, the weekly totals for questions 9 and 15 may not balance, but they should approximate each other.

Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
				17.
$	$	$	$	$ 18.

ITEMS MICROFILMED—total count of all check processing items filmed today.

IV. ITEMS MICROFILMED

QUESTION	Question Relationship	Monday	Tuesday
19. Total number of items filmed prior to reader/sorter processing.	——		
20. Total number of items filmed after reader/sorter processing.	——		
21. Total number of items filmed during reader/sorter processing.	——		
22. Total number of items microfilmed today.	19+20+21=22		

V. REJECTS—(Number of rejects occurred from question 7, Section I)

QUESTION	Question Relationship	Monday	Tuesday
23. Total number because of transit number field.	——		
24. Total number because of account number field.	——		
25. Total number because of dollar amount field.	——		
26. Total number due to other reasons.	——		
27. Total number of first-pass MICR rejects before high-speed reject reentry.	23+24+25+26=27		
28. Total number of first-pass MICR rejects remaining after high-speed reject reentry.	——		

Please report all actual counts. Do *not* round off.

Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
				19.
				20.
				21.
				22.

REJECTS—are items rejected for any reason on the first pass through a MICR reader/sorter.

HIGH-SPEED REJECT REENTRY—is the recapture of items rejected for any reason on the first pass through a MICR reader/sorter by repassing the items.

Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
				23.
				24.
				25.
				26.
				27.
				28.

EXCEPTION ITEMS—items or notification of items (such as debits, credits or inquiries) that may require reconcilement with other banks.

MISSENDS—items you missent or received from other banks that did not belong to you.

MISCODES (Encoding Errors)—dollar amount miscoded items you sent or received from other banks.

LISTING ERRORS (Incorrectly Charged)—items listed for an amount different from the written amount that you sent or received from other banks.

FREE—items received but not listed on incoming cash letters. (Enclosed not listed.)

LOST—items listed on the incoming cash letter but not received. (Listed not enclosed.)

VI. EXCEPTION ITEMS

QUESTION	Monday		Tuesday		Wednesday	
	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved
29./30. Missends						
31./32. Miscodes (Encoding Errors)						
33./34. Listing Errors (Incorrectly Charged)						
35./36. Free						
37./38. Lost						
39./40. Total exception items today 29+31+33+35+37=39 30+32+34+36+38=40	**39.**	**40.**	**39.**	**40.**	**39.**	**40.**
41. Total dollar value of items in No. 39.	$		$		$	
42. Total dollar value of items in No. 40.	$		$		$	

Please report all actual counts. Do *not* round off.

Thursday		Friday		Saturday		WEEKLY TOTAL	
Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved
						29.	30.
						31.	32.
						33.	34.
						35.	36.
						37.	38.
39.	40.	39.	40.	39.	40.	39.	40.
$		$		$		$ 41.	
$		$		$		$ 42.	

LABOR MAN-HOURS—number of clerical and supervisory man-hours worked to complete each labor category listed. Separate estimated production from supervisory man-hours when appropriate for working supervisor. Include general force man-hours used in appropriate labor categories listed.

MAN-HOURS—productive time spent by department employees in completing the following tasks:

EXCEPTION ITEM MAN-HOURS—number of man-hours spent in discovering/resolving exception items for the calendar day.

PREPARATION MAN-HOURS—number of man-hours spent in receiving, batching, performing quality control, and preproving incoming pre-encoded item deposits.

ENCODING OPERATOR MAN-HOURS—number of man-hours spent encoding the items received by your bank that were not encoded.

READER/SORTER OPERATOR MAN-HOURS—number of man-hours spent processing first pass items on the reader/sorter.

MICROFILM OPERATOR MAN-HOURS—number of man-hours spent microfilming the check processing items.

VII. LABOR MAN-HOURS

QUESTION	Monday		Tuesday		Wednesday	
	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
43./44. Total number of nonofficer man-hours to process the exception items in Nos. 39 and 40.						
45./46. Total data control man-hours to process the items in No. 9.						
47./48. Total single-pocket encoding operator man-hours to process the items in Nos. 3 and 4.						
49./50. Total preparation man-hours to process the items in Nos. 1 and 2.						
51./52. Total multipocket encoding operator man-hours to process the items in Nos. 5 and 6.						
53./54. Total reader/sorter man-hours to process the items in No. 7.						
55./56. Total operator man-hours for cash letter makeup; Nos. 10 and 11.						
57./58. Total microfilm operator man-hours to process the items in Nos. 19 and 20.						

DATA CONTROL MAN-HOURS—consists of making MICR corrections or substitutions, preparing other entries for high-speed processing, controlling the movement of batches of items into and out of high-speed processing areas, balancing the transit and DDA entry runs, and preparing of daily settlement figures for departments involved in processing checks.

RETURN MAN-HOURS—number of man-hours spent in processing items returned to your bank that you had originally sent out as on-others items.

PAYING AND FILING MAN-HOURS—consists of processing "on-us" items, including the capture of MICR data preparing daily transaction files, updating customer master files, sorting paper documents, statement printing, management reports, verification of signature, date holds, stop payments, check filing, and statement rendering.

BULK FILING PRODUCTIVITY—number of man-hours spent in the capture of "on-us" MICR data, preparing daily transaction files, updating customer master files, cycle sorting daily on-us items for storage, retrieving and fine sorting cycle-to-date paper items, verifying stop payments, date holds and suspects, statement printing, and statement rendering.

CASH LETTER MAKE-UP MAN-HOURS—consists of processing outgoing ("on-others") items on computer and/or reader/sorter equipment, including the printing of cash letters, the fine sorting of items by destination, and the assembly and dispatch of these items, including any manual processing of quick kills and reader/sorter rejects.

Thursday		Friday		Saturday		WEEKLY TOTAL	
Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
						43.	44.
						45.	46.
						47.	48.
						49.	50.
						51.	52.
						53.	54.
						55.	56.
						57.	58.

VII. LABOR MAN-HOURS (continued)

*If bulk filing, skip questions 59 and 60 and answer questions 61 and 62.

QUESTION	Monday		Tuesday		Wednesday	
	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
59./60. Total paying and filing man-hours to process the items in Nos. 12, 13, and 14.						
61./62. Total bulk filing man-hours to process the items in Nos. 12, 13, and 14.						
63./64. Total man-hours to process return items in No. 17.						
65. All other nonofficer man-hours used in check processing not reported in Nos. 43 to 64.	Hours / Description **65.** Total		Hours / Description **65.** Total		Hours / Description **65.** Total	

Thursday		Friday		Saturday		WEEKLY TOTAL	
Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
						59.	**60.**
						61.	**62.**
						63.	**64.**
Hours Description _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ **65.** Total _____		Hours Description _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ **65.** Total _____		Hours Description _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ **65.** Total _____		**65.** Total _____
		66. Total of questions 43 to 65.				**66.**	

PLEASE COMPLETE THE FOLLOWING AT THE END OF THE WEEK:

Total of Debit and Credit Outstanding Transit Exception Items	Part of Total Exception Items (Debit and Credit) That Have Been Outstanding for:				
	1 Month or Less	1-2 Months	2-4 Months	4-6 Months	Over 6 Months
67. $_____ Amount	**68.** $_____ Amount	**69.** $_____ Amount	**70.** $_____ Amount	**71.** $_____ Amount	**72.** $_____ Amount
73. _____ Items	**74.** _____ Items	**75.** _____ Items	**76.** _____ Items	**77.** _____ Items	**78.** _____ Items

NOTE: 67=68+69+70+71+72
73=74+75+76+77+78

79. Generally, our bank would: (circle one)

Always balance before items leave the bank, even if it means missing a transit deadline. **1**

Attempt to balance before the items leave the bank, but will make a transit deadline even if balancing is incomplete. **2**

Very seldom balance before the items leave the bank to make transit deadline. **3**

80. Our bank's experience over the last year indicates that exception items have: (circle one)

Why

Grown **1** _____

Remained about the same **2** _____

Decreased **3** _____

81. The staff responsible for making adjustments and reconciliations over the last year has:

*Number of People**		1979	1980
Grown	1	**82.**	**83.**
Remained about the same	2		
Decreased	3		

**Number of full-time equivalent people.*
Express part-time people as fractional of full-time people.

SPECIAL PROCESSING QUESTIONNAIRE

Note: The following two sections should be completed if your bank utilizes on-line reject reentry and/or uses automated reject processing equipment.

ON-LINE REJECT REENTRY—processing of items rejected from all first pass and subsequent passes of the MICR reader/sorter, using CRT or other device (e.g., BancTec Core) to provide balancing, float, and on-us posting data directly to the MICR capture system.

ON-LINE REJECT REENTRY MAN-HOURS—consists of making MICR corrections/substitutions through CRT or other device, controlling the movement of batches of items into and out of the high-speed processing area, balancing the transit and DDA entry runs, both first and subsequent passes, and providing daily settlement figures for all affected departments.

ON-LINE REJECT REENTRY

QUESTION	Question Relationship	Weekly Total
84. Total number of reject items reentered on-line from first passes.	_____	**84.**
85. Total number of reject items reentered on-line from subsequent passes.	_____	**85.**
86. Total number of reject items reentered.	84 + 85 = 86	**86.**
87. Total man-hours to reenter reject items in No. 86.	_____	**87.**

AUTOMATED REJECT PROCESSING

AUTOMATED REJECT PROCESSING—processing of all nonmachinable items, including items rejected by the MICR reader/sorter, on *both first pass and subsequent passes,* using automated equipment from vendors, e.g., BancTec, Burroughs, Cummins-Allison, Lundy, NCR.

AUTOMATED REJECT PROCESSING MAN-HOURS—consists of preparing reject items for processing (including attaching strips) processing items, and balancing output.

88. Is your bank using automated processing? (circle one)

1. No **2.** Yes, exclusively **3.** Yes, in combination with manual methods

89. If not, does your bank plan to acquire automated reject processing capability? (circle one)

1. No **2.** Yes **3.** Undecided

90. If your bank uses automated reject processing, is it (circle one)

1. On-line? **2.** Off-line?

91. If your bank uses automated reject processing, do you repair all fields, including account number? (circle one)

1. No **2.** Yes **3.** Yes, on selected banks **4.** Yes, but only if operator intervention is not required

QUESTION	Question Relationship	Weekly Total
92. Total number of all rejects processed through automated reject systems.	_____	**92.**
93. Total number of all rejects processed through manual reject systems.	_____	**93.**
94. Total number of MICR rejects processed.	92+93=94	**94.**
95. Total man-hours used to process reject items in No. 94.	_____	**95.**

Problems/comments: _____

1980 Survey of Electronic Funds Transfer Transactions

Please report all actual counts. Do *not* round off.

ACH TRANSACTIONS—any electronic funds transfer transactions processed through a local or regional automated clearinghouse, including any items you have processed for your own customers.

RETURNED ACH TRANSACTIONS:

Sent—any ACH transaction that you returned to the originator because you were unable to post to an account or for which no prenotification was on file.

Received—any ACH transaction that you originated, but which was returned to you by the ACH or the intended receiver.

I. ACH TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESDAY	
		Sent	Received	Sent	
1./2. Debits	———				
3./4. Credits	———				
5./6. Total ACH transactions	1+3=5 2+4=6				

II. RETURNED ACH TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESDAY	
		Sent	Received	Sent	
7./8. Debits returned	———				
9./10. Credits returned	———				
11./12. Total returned ACH transactions	7+9=11 8+10=12				

III. ACH DEBIT TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESDAY	
		Sent	Received	Sent	
13./14. Insurance premium	———				
15./16. Home mortgage	———				
17./18. Telephone bill payment	———				
19./20. Corporate payment—replacement for depository transfer	———				
21./22. Other payments	———				
23./24. Total ACH debit transactions	13+15+17+19+21=23 14+16+18+20+22=24				

ACH DEBIT TRANSACTIONS:

Insurance Premium, Home Mortgage—any ACH transaction sent or received by you for the payment of a consumer obligation.

Telephone Bill Payment—any ACH transaction sent or received by you as a result of a telephone bill payment program at a financial institution.

Corporate Payment—any ACH transaction sent or received by you that was originated by a corporation for the account of a corporation.

	WEDNESDAY		THURSDAY		FRIDAY		SATURDAY-SUNDAY		WEEKLY TOTAL	
ec'd	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
									1.	2.
									3.	4.
									5.	6.

	WEDNESDAY		THURSDAY		FRIDAY		SATURDAY-SUNDAY		WEEKLY TOTAL	
Rec'd	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
									7.	8.
									9.	10.
									11.	12.

	WEDNESDAY		THURSDAY		FRIDAY		SATURDAY-SUNDAY		WEEKLY TOTAL	
Rec'd	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
									13.	14.
									15.	16.
									17.	18.
									19.	20.
									21.	22.
									23.	24.

Please report all actual counts. Do *not* round off.

ATM TRANSACTIONS—any transactions initiated at an automated teller machine by the customer.

IV. ATM TRANSACTIONS

QUESTION	Question Relationship	MONDAY	TUESD
25. Total number of cash withdrawals from checking.			
26. Total number of cash withdrawals from savings.			
27. Total number of cash withdrawals from credit card.			
28. Total number of balance inquiries.			
29. Total number of transfers between checking, savings, and credit card accounts.			
30. Total number of checking deposits received.			
31. Total number of savings deposits received.			
32. Total number of other ATM transactions.			
33. Total ATM transactions.	25+26+27+28+29+ 30+31+32=33		
34. Total dollar value of items in No. 25.		$	$
35. Total dollar value of items in No. 26.		$	$
36. Total dollar value of items in No. 27.		$	$
37. Total dollar value of items in No. 30.		$	$
38. Total dollar value of items in No. 31.		$	$

Please complete the following questions:

	Main Of
How many automated teller machines do you presently have in service?	**39.**
How many automated teller machines do you plan to install in the next 12 months?	**43.**
What was the total volume of ATM transactions for all machines installed at each location during the survey week, excluding balance inquiries.	**47.**

51. Are your automated teller machines currently **1.** On-line or **2.** Off-line? *(circle one)*

	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY/SUNDAY	WEEKLY TOTAL
					25.
					26.
					27.
					28.
					29.
					30.
					31.
					32.
					33.
	$	$	$	$	34. $
	$	$	$	$	35. $
	$	$	$	$	36. $
	$	$	$	$	37. $
	$	$	$	$	38. $

	Branch Offices	Off-premise Units	Total ATM Units
	40.	41.	42.
	44.	45.	46.
	48.	49.	50.

NOTE: 42=39+40+41
46=43+44+45
50=47+48+49=33-28

Appendix B

Check Flow Patterns

Table 56

The Percent of Automated Reject Processing by Area

Area	Automated Reject Processing† 1978	1979	1980	Manual Reject Processing‡ 1978	1979	1980
Boston	70.8	82.8	74.1	29.2	17.2	25.9
New York	51.5	60.9	43.0	48.5	39.1	57.0
Philadelphia	53.0	64.5	53.9	47.0	35.5	46.1
Pittsburgh	97.0	91.7	69.4	3.0	8.3	30.6
Washington, D.C.	44.6	82.9	44.3	55.4	17.1	55.7
Atlanta	80.7	63.0	61.2	19.3	37.0	38.8
Chicago	53.4	59.1	39.5	46.6	40.9	60.5
Cleveland	72.9	38.7	67.1	27.1	61.3	32.9
Detroit	*	90.1	60.0	*	9.9	40.0
Minneapolis/St. Paul	*	*	*	*	*	*
St. Louis	48.7	69.9	62.4	51.3	30.1	37.6
Dallas	76.7	88.2	96.4	23.3	11.8	3.6
Houston	84.5	23.6	63.9	15.5	76.4	36.1
Los Angeles	51.9	84.9	82.6	48.1	15.1	17.4
San Francisco	76.0	69.0	59.7	24.0	31.0	40.3
Denver	*	53.9	47.8	*	46.1	52.2
Total banks	70	65	115	70	65	115
Average	66.0	66.3	68.6	33.9	33.7	31.4
Median	75.0	73.8	73.8	24.0	26.2	26.2

*No respondents.

†$\frac{Q92}{Q94} \times 100$

‡$\frac{Q93}{Q94} \times 100$

Table 57

The Distribution of the Automated Reject Processing Rate

Rate	Number of Banks 1978	1979	1980
0% — 10%	6	6	25
10% — 20%	1	3	3
20% — 30%	9	0	6
30% — 40%	3	3	4
40% — 50%	3	3	2
50% — 60%	4	7	6
60% — 70%	4	5	8
70% — 80%	11	11	10
80% — 90%	10	11	10
90% — 100%	5	6	13
100%	14	10	28
Total banks	70	65	115
Average	66.0	66.3	63.6
Median	75.0	73.8	73.8

$\frac{Q92}{Q94} \times 100$

Table 58

The Percent of Incoming Items Encoded

Area	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
Boston	61.7%	67.2%	73.5%	66.1%	56.5%	64.1%	48.1%	52.1%
New York	54.5	49.0	55.8	53.5	51.0	48.9	48.2	51.8
Philadelphia	66.8	69.6	50.8	72.1	57.0	56.0	56.9	44.6
Pittsburgh	56.5	60.0	52.5	53.6	54.9	55.0	48.7	39.6
Washington, D.C.	*	48.6	43.5	30.3	49.2	50.6	43.9	43.8
Atlanta	62.9	66.4	67.8	56.5	52.2	58.2	54.5	51.1
Chicago	70.0	80.2	83.9	78.7	67.8	77.2	70.2	69.4
Cleveland	61.5	58.2	62.9	62.2	52.1	51.7	52.9	55.8
Detroit	52.7	57.6	60.0	57.1	44.3	51.3	40.1	43.4
Minneapolis/St. Paul	67.7	*	*	*	67.7	*	*	*
St. Louis	65.0	68.6	68.4	73.1	65.5	66.7	66.5	69.7
Dallas	80.3	80.0	82.4	83.8	75.5	76.3	71.1	76.8
Houston	80.0	85.5	86.8	88.7	70.8	65.9	62.3	69.2
Los Angeles	50.3	50.1	43.6	45.4	45.9	42.3	33.8	36.0
San Francisco	39.6	36.9	38.7	42.3	39.0	38.5	40.2	46.8
Denver	77.8	77.8	77.9	85.4	67.2	68.4	67.3	66.9
Total banks	44	43	30	36	166	154	152	170
Average	57.3	57.4	56.8	64.4	53.3	53.9	50.7	57.0

*No respondents.

$$\frac{Q1 + Q2}{Q9} \times 100$$

Table 59

The Percent of On-Us Items

Area	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
Boston	32.6%	33.4%	22.8%	31.5%	39.7%	37.5%	50.4%	46.6%
New York	38.5	50.3	38.2	46.9	44.0	49.9	49.0	51.9
Philadelphia	26.4	24.4	53.2	29.6	36.9	38.8	51.3	51.1
Pittsburgh	46.1	49.5	50.0	50.5	48.1	53.6	60.8	58.2
Washington, D.C.	*	37.7	33.5	33.2	44.1	43.8	41.0	39.0
Atlanta	37.5	32.1	26.0	25.4	44.4	40.4	43.9	43.5
Chicago	27.3	27.2	25.7	27.6	28.4	27.9	28.9	29.5
Cleveland	39.6	41.0	43.2	48.7	42.0	44.1	43.4	47.1
Detroit	46.3	48.0	48.7	44.9	47.1	49.2	52.0	40.5
Minneapolis/St. Paul	31.7	*	*	*	31.7	*	*	*
St. Louis	19.2	18.0	14.2	15.6	23.9	25.2	22.5	23.5
Dallas	18.3	15.1	17.6	15.2	22.7	18.9	40.0	22.6
Houston	16.7	14.4	15.8	21.1	21.1	28.9	27.7	27.8
Los Angeles	46.7	44.5	31.2	74.0	56.5	55.6	57.6	67.5
San Francisco	59.2	61.0	61.2	64.3	57.9	60.3	48.4	58.9
Denver	42.5	39.2	28.3	37.0	42.6	41.4	36.1	44.0
Total banks	44	43	30	36	168	149	153	170
Average	40.7	42.5	33.8	39.9	43.3	44.8	44.5	44.4

*No respondents.

$$\frac{Q12 + Q13 + Q14}{Q15} \times 100$$

Table 60

The Percent of Payable-Thru Drafts

Area	ADL Banks 1977	1978	1979	1980	All Banks 1977	1978	1979	1980
Boston	9.3%	9.3%	4.1%	9.1%	12.9%	17.3%	9.6%	8.5%
New York	1.5	5.5	23.1	6.5	1.6	4.2	8.4	3.2
Philadelphia	1.5	5.5	23.1	2.9	2.0	2.7	1.6	1.7
Pittsburgh	0.5	0.6	0.4	0.5	0.4	0.4	0.2	0.3
Washington, D.C.	*	11.3	12.1	9.9	3.2	5.6	2.8	14.9
Atlanta	3.1	2.3	2.1	2.6	1.5	1.4	1.4	1.3
Chicago	12.6	12.8	9.8	12.4	8.3	10.4	5.8	7.2
Cleveland	1.8	1.3	1.3	1.0	2.6	1.4	2.1	1.6
Detroit	0.7	0.6	0.6	0.6	1.0	0.5	8.1	0.5
Minneapolis/St. Paul	8.2	*	*	*	8.2	*	*	*
St. Louis	9.5	9.9	6.5	5.5	5.2	4.3	6.3	5.3
Dallas	12.8	7.7	5.1	4.6	7.3	5.1	2.6	2.4
Houston	1.6	1.2	1.1	2.2	1.8	1.1	1.6	2.4
Los Angeles	4.2	6.8	1.3	20.5	2.2	3.0	0.9	2.6
San Francisco	0.7	0.4	1.0	2.1	0.8	0.6	19.0	2.4
Denver	52.3	58.7	6.7	4.9	34.5	35.3	7.6	4.8
Total banks	44	43	30	36	168	150	153	169
Average	4.6	5.3	3.3	8.6	3.4	4.0	3.8	5.2

*No respondents.

$$\frac{Q14}{Q12 + Q13 + Q14} \times 100$$

Table 61

The Percent of Supervisory to Clerical Man-Hours

Task	Average Supervisory Time 1977	1978	1979	1980
Processing of exception items (Q44 ÷ Q43) × 100	13.4%	13.0%	12.4%	14.0%
Data control (Q46 ÷ Q45) × 100	13.7%	12.9%	16.7%	12.8%
Encoding (Q48 + Q52) ÷ (Q47 + Q51) × 100	10.3%	11.8%	6.3%	12.1%
Check receiving (Q50 ÷ Q49) × 100	*	*	*	11.6%
Reader/Sorter (Q54 ÷ Q53) × 100	17.6%	20.1%	16.8%	15.2%
Cash letter make-up (Q56 ÷ Q55) × 100	13.0%	14.1%	13.0%	13.6%
Microfilm (Q58 ÷ Q57) × 100	7.0%	8.1%	10.0%	5.5%
Paying and filing (Q60 ÷ Q59) × 100	8.0%	9.8%	4.9%	8.2%
Bulk filing (Q62 ÷ Q61) × 100	*	*	*	10.8%
Return items (Q64 ÷ Q63) × 100	9.8%	12.8%	23.5%	12.8%
Total banks	146	134	151	158
Combined average	10.8%	12.1%	9.4%	11.7%

*No comparable data collected.

$$\frac{Q44 + Q46 + Q48 + Q50 + Q52 + Q54 + Q56 + Q58 + Q60 + Q62 + Q64}{Q43 + Q45 + Q47 + Q49 + Q51 + Q53 + Q55 + Q57 + Q59 + Q61 + Q63} \times 100$$

Appendix C

Problems Reported by Bankers

The following comments were submitted by bankers who participated in the 1980 BAI Survey. The purpose of this section is to inform bankers about the overall problems in the check collection system. Therefore, references concerning specific organizations, vendors, or equipment were avoided. The most frequent comment observed this year concerns the lack of productivity that exists in the adjustments and return items operations between the Federal Reserve and commercial banks.

Personnel—Training and Turnover

"There have been minimal personnel problems in our bank. Absenteeism and employee turnover have been low due to an effort by management to promote total system training. The purpose of total training has been to provide the individual employee with an understanding of how his particular job relates to the entire check processing operation. Having an appreciation for the total operation leads to an increased awareness of the person's own job function. Other related efforts by management to reduce personnel problems include specialized internal departmental training, new management training, and cross-training where the employee becomes familiar with job tasks in more than one area. One personnel difficulty that has been encountered has been caused by wage compression. Due to the increase in the minimum wage, older, established employees have found that their increased compensation over many years is not much different from newly hired employees' starting pay. The experienced employees naturally regard this situation as being inequitable."

"Obtaining and keeping high-quality, trained staff members is becoming increasingly difficult."

"Frequent personnel turnover necessitates doubling up on various duties."

"Staff turnover in check processing continues to be a problem, particularly in the encoding section and the night clerical force. The repetitive task and volume fluctuations contributing to irregular work schedules seems to be the main complaint, in addition to the large number of trainees who do not meet production standards."

"There is difficulty in filling entry-level check processing positions."

"There is a shortage of qualified staff to provide adequate backup for key positions."

Transportation and Mail

"The severe cutback in commercial airline schedules combined with the escalating costs of other carriers and the inaccessibility of the Fed's Interdistrict Transportation Network to commercial banks continue to put pressure on float reduction for the entire banking system."

"High oil prices have caused our transportation expense in 1980 to increase dramatically."

"Transportation of cash letters is becoming more costly, while courier reliability is decreasing."

"As stated in last year's survey, we are still experiencing problems getting adequate air and ground transportation to our endpoints. With Federal Reserve pricing coming up, this could be an important factor in the clearing system."

"There is the problem of branches staying open later, but processing deadlines have remained unchanged. Because of the physical locations of our branches and correspondent banks throughout the state, it is becoming more difficult to transport the work to the processing center."

"Our bank has encountered transportation problems with unannounced airline schedule changes, particularly on holidays."

Reject Rates and Handling

"Prime pass reject rates are running above average for those banks and customers who send us pre-encoded items that are not processed through reader/sorter equipment prior to our receipt. We receive an overabundance of not on-us items and poor dollar encoded items from members of our clearing house using multipocket proof equipment. When requests are made for better quality, sensitivity to the problem seems to be lacking, apparently because the reject problem is not seen first hand and the associated costs are not experienced. More and more high-volume corporate customers are dollar encoding their deposited items, causing higher reject rates."

"Repair strips and carrier envelopes not completely MICR-encoded is a problem. These items lack full field repair of the account number."

"Encoding errors appear to be on the increase."

"Printing quality from one major vendor appears to be slipping."

"Insurance drafts are the problems due to incorrect MICR information or lack of the name of the account."

"Reject handling and adjustments continue, and will continue, to be major areas for check operations improvement efforts."

"There have been encoding errors on single item deposits."

Equipment and System Problems

"The only major equipment related difficulty has been with programming support. Our bank has a recognized need for computer programmers who are experienced in our check processing software. The lack of this support has slowed our efforts to improve processing and to respond to changes in the industry."

"There is a need for responsive vendor management during critical situations and failures."

"The image match feature of our software system often fails, causing increases in unallocated float to the customer that must be corrected the following day."

"Working deadlines are becoming harder to meet due to volume increases, additional automated applications, and mergers. This has resulted in our acquisition of a new computer system and reject reentry equipment for 1981."

"Problems with check filing, such as poor quality checks, missorted items, and increases in volume, have made it necessary to plan for bulk filing in 1981."

"We have experienced excessive jam ratios on our reader/sorter (both detected and undetected)."

"The advent of bulk filing has resulted in a decrease in man-hours for on-us items paid and filed. A decrease was found in the number of all other nonofficer man-hours not used in specifically designated check processing functions. This is due to the use of more efficient off-line programs for fine sorting of correspondent DDA work, which allows for simultaneous, multiple bank processing through all but the last pass."

Returns and Adjustments

"Resolution of exception items with money center banks is slow. Correspondence with them goes unanswered even after several inquiries."

"There are extreme delays in clearing up exception items with our Federal Reserve Bank."

"We receive an excessive number of items, without entry, which consist of the sending bank's own items."

"There have been procedural problems in the Fed's handling of photocopy charges and the policing of its established rules."

"We have noted incomplete and incorrect information on adjusting entries."

"Check processing exceptions continue to be one of our major areas of concern."

"The most labor intensive areas of item processing are check adjustments and return items, and they remain that way without significant progress in handling in sight. Standardization helps the situation, but we cannot make productivity gains without specialized equipment."

"There should be some streamlining of the returns process as well as some standard for endorsement information and positioning on the document."

"Too many return items are coming back for tape total and position, even if the endorsing bank's stamp is clear."

"Quality of endorsements is a problem."

"The photocopy collection procedures are causing duplicate payments when check carriers are used. The source of this problem is the reporting of a missing item that is not actually missing. The photocopy and the original flow through the system and both are charged to the DDA account."

"The average response time for adjustment resolution has increased from 9 to 14 days during the past year. This has been caused primarily by the Federal Reserve offices. Many banks are refusing to debit or credit on an adjustment that has been fully documented, until the banks have completed their research cycle. Therefore, these banks are not following the accepted, nationally recommended guidelines."

"Collection of Federal Reserve adjustments requires much more time than is reasonable."

"We are experiencing three to six month delays in receiving advices of encoding errors and photocopies of collections from other banks. This results in excess work and write-offs."

"There should be a separate charge with advice for photocopies in exchanged work."

"The Fed's policy of not endorsing prepackaged cash letters has caused problems and additional time in determining the source of receipt for return items."

"Although we have limited volumes flowing through ACHs, we have experienced an unacceptable response time regarding adjustments and return items. Audit trails and good, sound adjustment procedures and commitments have not been emphasized enough. As ACH volumes grow, these problems will become unbearable unless they are addressed immediately."

"Adjustments pertaining to Treasury checks are taking as long as six months to resolve due to poor response from the Treasury's reconciliation staff."

"There is an increasing need to establish a uniform agreement on handling exception items between direct send correspondent banks. This agreement should be similar to those established by Federal Reserve regulation in order to reduce claims and disputes, as well as to provide uniform time frames for action/resolution."

"Although the major banks in consort with the Federal Reserve Bank have developed and circulated procedures in relation to return items, it must be noted that most banks outside of the Second District are not complying. Specifically, receiving banks should notify and provide a description of large items ($2,500) to sending banks prior to return. Unfortunately, this practice is not followed; hence, risk exposure is greatly increased."

Security

"Because interest rates have remained excessively high for an extended period of time, the bank has noticed an increase in the number of kiting instances, and also the number of attempted forgeries."

"In 1980, we experienced the unusual situation of large segments of deposited transactions mysteriously disappearing on seven separate days. This required several thousand hours of effort to reconstruct the transactions, because the losses occurred prior to entry into our system. The audit trail, therefore, was very weak. We have now strengthened the control of our flow of work from branch locations to the central processing center."

Federal Reserve Pricing

"In 1981, Fed Pricing will force us to split out checks to many more endpoints. NOW accounts, share drafts, and CDAs will also put more pressure on our reader/sorter and related operations."

"Federal Reserve pricing will require major changes to our transit sending program during 1981. A detailed analysis will be required to institute a new sending program."

"The Federal Reserve has provided inconsistent information to the bank about the pricing of its services, and also information concerning the implementation of a fractional float system, making effective planning difficult."

Miscellaneous

"We would like to see some effort to standardize Federal Reserve procedures, not only in Florida, but throughout the United States."

"An active cash letter sales group has created a positive impact on our POD volumes."

"Special handling required for payable-thru drafts in a continuing problem."

"Remote disbursement and depository transfer activity continues to grow, creating a high dollar value of transit checks to be cleared, which in turn, has increased float dollars. I would recommend that it be mandatory for any transaction exceeding a specified dollar amount, say $10,000, to be wired and initiated by the maker."

"There is a need for receipt control of parcels exchanged on a local basis."

"Some high-volume customers submit pre-encoded deposits to us with tape listings created from their payment stubs instead of from the checks received. This results in numerous balancing problems daily."

"A large number of unqualified counter checks and payable-thru drafts have been discovered in the system."